CITY OF DENTON

TECHNOLOGY SERVICES

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Endorsement of the Technology Services Business Continuity Plan

In an effort to proactively prepare for effective and efficient response to a significant disruption or disaster impacting the City of Denton, the Technology Services team has designed, developed, and deployed the attached "updated" **Business Continuity Plan, Version 10.0,** to ensure continuity of operations through a crisis.

The following *key assumptions* are fundamental to the design and intended purpose of the Business Continuity Plan:

- ✓ Any scenario requiring civil response will take priority over any and all components of this Technology Services plan.
- ✓ Not all city facilities will be destroyed or disabled. This plan assumes the availability of one of the following locations: City Hall, City Hall East, North Branch Library, DME E&O, Facilities Management or the Service Center.
- ✓ A majority of Technology Services staff will be available to respond to an incident, and the documentation assumes a familiarity with the systems and applications being recovered.

Executive management for the City of Denton has reviewed and approved this plan, as witnessed by our signatures this 23 day of September, 2019.

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CITY OF DENTON
TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

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OVERVIEW CHAPTER 1

This section provides a Plan Overview for the City of Denton Technology Services Business Continuity Plan.

NOTE:

The Business Continuity Plan Outline for the City of Denton is driven by the Business Impact Analysis performed for the Technology Services team October through December 2001, the department interviews conducted January through July 2002, the department specific updates completed in May 2003, February 2007, and June/July 2011, Disaster Recovery exercises in April 2004, April 2006, February 2007, July 2008, August 2009, February 2010, February 2011, May 2012, July 2013, July 2014, July 2015, July 2016, August 2017, August 2018, and August 2019. This plan primarily houses the BCP information specific to Technology Services Continuity and Recovery requirements in an effort to provide ongoing support for the business units we serve in the event of significant disruptions or a disaster event.

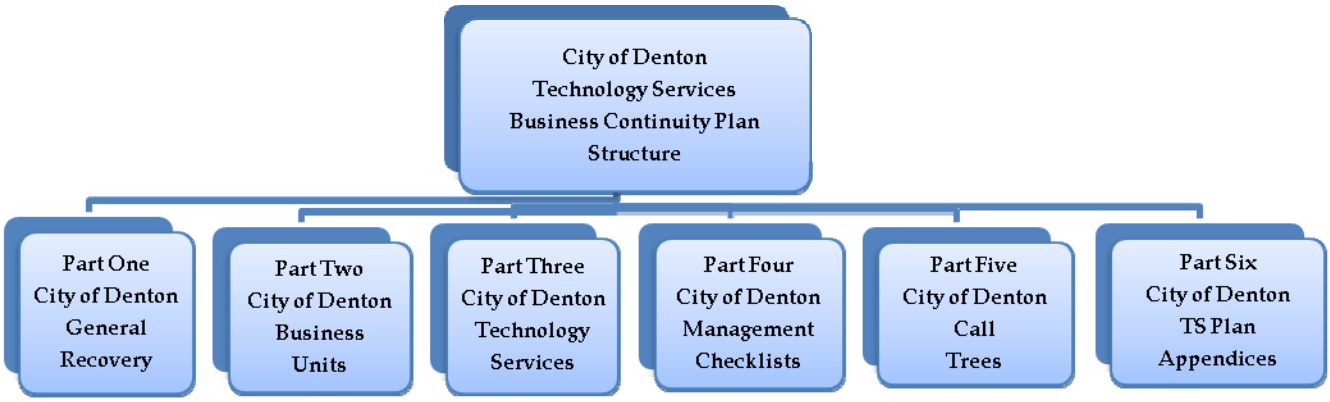
KEY ASSUMPTIONS:

Any scenario requiring civil response will take priority over any and all components of the Technology Services plan.

Not all city facilities will be destroyed or disabled. This plan assumes the availability of one of the following locations: City Hall, City Hall East, North Branch Library, DME E&O and Facilities Management, or the Service Center.

A majority of Technology Services staff will be available to respond to an incident, and the documentation assumes a familiarity with the systems and applications being recovered.

Overview of the City of Denton Technology Services Business Continuity Plan Structure



PLAN INTRODUCTION CHAPTER 1

Operations Overview Section 1

This plan outlines priorities and procedures which will set into motion the resumption of business for the City of Denton and the City of Denton Technology Services team, should a disaster or other abnormal event take place. The City of Denton is made up of several departments:

- Airport
- Building Inspection
- City Manager/Public Affairs
- Customer Service
- Denton Municipal Electric
- Economic Development
- Facilities Management
- Finance
- Fire
- Fleet Services
- Human Resources
- Legal
- Library
- Municipal Court
- Parks
- Planning
- Police
- Procurement (Purchasing/Warehouse)
- Risk Management
- Solid Waste
- Water Reclamation

In providing service to their citizens, the City of Denton's department roles mandate that some services are non-interruptible. If a natural or manmade disaster were to interrupt the City of Denton's operations, certain functions in critical areas must be restored within hours or minutes. Other areas, with less critical timelines, may be delayed for a few days or, in some cases, a few weeks.

In any emergency, the primary consideration after ensuring the safety and care of employees and visitors is the resumption of department activities in a responsible, well-planned manner. This is accomplished by planning for various department disruptions in such detail that all involved have a clear direction and understanding of how the departments intend to overcome the various challenges. While all functions must eventually be brought back on-line, certain functions will be deemed more critical than others will.

Plan Layout Section 2

This plan is organized in sections for easy reference. Each major section deals with a component of the plan, beginning with plan activation through restoration of normal operations. Information about plan exercises and maintenance procedures are also included in this document. The appendices contain forms that may be required during the recovery process, department application priorities by platform, vendor lists, etc.

The following is a description of each section in this plan:

- **Part 1, Chapter 1** - Plan Introduction - This section provides an overview of operations at the City of Denton, as well as an outline summarizing the organization of this plan.

- **Part 1, Chapter 2 - Purpose, Objectives, Assumptions, and Risks -** This section defines the purpose of the Business Continuity Plan, the objectives to be accomplished, the assumptions used in the plan, and any known risk factors facing the departments before, during, or after a disaster scenario.

- **Part 1, Chapter 3 - Time Criticality Classifications -** This section briefly describes the classification system the city has developed to classify the time criticality of department functions.

- **Part 1, Chapter 4 - Recovery Management -** This section describes the organizational structure of the recovery teams and the roles of the management team members.

- **Part 1, Chapter 5 - Plan Activation -** This section begins by describing the normal process by which an emergency is communicated, how the damage assessment is performed, and how a decision to activate the plan is made and by whom. Following the plan activation is a description of how the recovery team should begin the establishment of the Emergency Operations Center and the emergency notification process.

- **Part 1, Chapter 6 - Recovery Communications -** This section identifies how communications will be handled during the recovery process. This includes communication to employees and departments, communication of the recovery status, problem management, and the role of the Director of Public Affairs.

- **Part 1, Chapter 7 - Recovery Resources and Requirements -** This section provides an overview of the recovery requirements and resources available.

- **Part 1, Chapter 8 - Human Resource Management -** This section describes how the City of Denton will manage the various human resource issues that may arise during the recovery effort. This includes provisions for temporary or contract help, assistance to employees in dealing with work and family related issues that arise during a disaster or the recovery process. Also, how travel and lodging for the recovery staff will be managed. Also included is assistance in the management of financial issues that arise during recovery, such as procedures for ordering equipment, expense report processing, and identification of cost centers for recovery expenses, etc.

- **Part 1, Chapter 9 - Business Continuity Plan Exercise & Maintenance -**This section describes the exercise policy and requirements, the process and actions that will be executed during an exercise, and the criteria by which the results of an exercise will be documented. The policy and requirements regarding maintenance of the Business Continuity Plan are also addressed.

- **Part 2 - Business Unit Recovery** – These sections provide detailed recovery requirements, technology resources, and procedures for each department.

- **Part 3 - Technology Services Recovery** – This section provides prioritizations, resource requirements, vendor information, and detailed recovery procedures to recover the City of Denton's critical technology and telecommunication functions in the required timeframe.

- **Part 4 - Response Team Leader Checklists –** This section provides checklists for the Response Team Leaders.

- **Part 5 - Employee Call Trees –** This section provides contact information for Recovery Management Team, Department Response Team Leaders, and Technology Services personnel.

- **Part 6 - Technology Services Appendices -** This section provides additional information and procedures referred to throughout the Business Continuity Plan.

POLICY, PURPOSE, OBJECTIVES, ASSUMPTIONS, AND RISKS CHAPTER 2

Policy Section 1

The City of Denton is committed to developing and maintaining a detailed and accurate Business Continuity Plan. Included in this plan must be mechanisms ample to ensure the expeditious and sufficient continuation and recovery of critical department functions in the event of a partial or total disaster or business interruption.

Purpose Section 2

The purpose of this plan is to document how the City of Denton will respond and recover in the event of a disaster. It defines recovery management, department requirements, resources available, and processes developed to recover the critical department functions. The plan components will detail the City of Denton's procedures for responding to an emergency that affects the departments' ability to perform functions critical to their operations. This plan is to be used as a tool to provide information and instructions on every aspect of the recovery process and as a step-by-step guide in a disaster and recovery situation.

Objectives Section 3

- Facilitate timely recovery of department functions;
- Minimize loss of revenue/customers;
- Maintain public image and reputation;
- Minimize loss of data; and
- Minimize the critical decisions to be made in a time of crisis.

Assumptions Section 4

This section identifies the assumptions made in this Business Continuity Plan:

1. Any scenario requiring civil response will take priority over all components of this Technology Services plan.
2. Not all city facilities will be destroyed or disabled. This plan assumes the availability of one of the following locations: City Hall, City Hall East, the North Branch Library, Facilities Management, or Service Center.
3. A majority of Technology Services staff will be available to respond to an incident, and the documentation assumes a familiarity with the systems and applications being recovered.
4. The type of disaster (i.e. fire, flooding, natural disaster, etc.) and the impact of a disaster will vary significantly.
5. As an organization, the City of Denton will accommodate, as best as possible, any requests or issues that may arise to meet the needs of employees and their families due to a disaster.

6. Adequate training and communication in the use of this plan will be the responsibility of the individual departments to structure and carry out with their employees. This includes ensuring that all employees are aware of this plan's existence, are familiar with its procedures, and understand their specific roles within the plan.

7. The plan is tested and reviewed on an annual basis.

8. This document, related procedures, and materials are stored in a secure offsite location and not only survive the disaster but are accessible within a reasonable timeframe following the disaster.

9. Recovery does not include information stored on individuals' PC hard drive, the 'C' drive. Recovery only includes information stored on the network.

10. All City personnel that are not a part of the Recovery Management Team or the Department Response Teams will assist in other capacities. This may include the recovery and salvage of data, files, and computer equipment and the restoration of functionality to all areas based on criticality.

The Technology Services recovery strategies and documentation are based on the following assumptions:

1. This documentation captures the City of Denton's Technology Services network capabilities, applications, and recovery procedures as they exist today.

2. Present server recovery procedures call for the shipment of new hardware, reinstallation of operating systems' software, and restoration of applications and data contained in tape back-ups, etc. Specific information can be found in Part 3 Technology Services Group of this document.

Risks **Section 5**

Event	No. of Depts. Identifying Concerns	Event Type	Likelihood of Occurrence	Estimated Severity	Prioritization of Event Impact
Loss of Technology Support	14	All	Moderate	High	**1**
Fire	12	All	Moderate	High	**2**
Tornado / Natural Disasters	11	Natural	Moderate	High	**3**
Workplace Violence	11	Manmade	Moderate	Moderate	**4**
Terrorist Threat	11	Manmade	Low	High	**5**
Loss of Key Personnel	10	All	Moderate	Moderate	**6**
Severe Weather Events	8	Natural	High	High	**7**
Power Outage	7	All	High	Moderate	**8**
Loss of Manual Records	7	All	Moderate	High	**9**
Hazmat Incident	7	Manmade	Moderate	High	**10**
Internal Sabotage	5	Manmade	Moderate	Moderate	**11**
Virus Infection	4	Manmade	High	Moderate	**12**
Train Derailment w/ Chemical Spill	4	Manmade	Moderate	High	**13**
Bomb Threat	4	Manmade	High	Low	**14**
Bioterrorist Attack	1	Manmade	Low	High	**15**
Proximity to Post Office	1	Manmade	N/A	N/A	**16**
Loss of Key Vendor Services	1	All	Moderate	Moderate	**17**
Black Mold	1	Natural	Moderate	Low	**18**
Denial of Access	1	All	Moderate	Moderate	**19**
Loss of Communication	1	All	Moderate	High	**20**
Aircraft Crash	1	Manmade	Low	Low	**21**
Hostage Situation	1	Manmade	Low	Moderate	**22**

TIME CRITICALITY CLASSIFICATIONS CHAPTER 3

This section describes the recovery strategies identified for the City of Denton's department's equipment and services.

Department functions and the systems that support them will be recovered in priority sequence based upon the classification of the function as agreed upon by department management. A summary of the functions performed at the City of Denton, their risk classifications, and a complete listing of the applications they depend on can be found in Part 6, Appendix 11, "Functions, Applications, and Priorities".

The function priorities used by the City of Denton are as follows:

- AAA = Recovery within 1 hour
- AA = Recovery time objective within 2 hours
- A = Recovery time objective within 4 hours
- B = Recovery time objective within 8 hours (may span 2 business days)
- C = Recovery time objective within 24 hours (will span 2 business days)
- D = Recovery time objective within 3 business days
- E = Recovery time objective within 7 business days
- F = Recovery time objective within 30 days

RECOVERY MANAGEMENT CHAPTER 4

It is anticipated there are levels of emergency response teams that will be engaged in a department recovery scenario.

Recovery Management Team Section 1

This team consists of the City of Denton's executive management and will report directly to the Emergency Operations Center and have responsibility to oversee the recovery and restoration process. The Fire Chief is responsible for communicating the recovery status to the Response Teams and making the necessary management decisions to support the recovery efforts. The Fire Chief has overall responsibility for the recovery team and communications. Refer to Part 1, Chapter 5, Section 4 "Emergency Operations Center", for more information about the Emergency Operations Center and Appendix 02, "Alternate Site / Emergency Operations Center Information", for directions and contact information for the City of Denton's Emergency Operations Center.

The overall objectives and functions of the Recovery Management Team are to:

- Make a preliminary assessment of the damage;
- Notify response team leaders on status, impact to department, and plan of action;
- Declare the disaster, if necessary;
- Initiate the plan during an emergency;
- Organize and operate the Emergency Operations Center as the central point of control during the recovery efforts; and
- Administer and direct the problem resolution function.

Team Roles and Members *Section 1-A*

The Recovery Management Team is organized as follows. Refer to the Employee Call Trees for emergency contact information and the Recovery Management Checklists (Part 4, Management Checklists) for step-by-step checklists for each member to use in the event of a disaster.

	Team Roles	Primary	Alternate
1.	Fire Chief	Kenneth Hedges	Chuck Goodman
2.	Director of Public Affairs	Sarah Kuechler	Ryan Adams
3.	Technology Services Team Leader	Melissa Kraft	Cherie Reed
4.	Emergency Operations Center Manager	Michael Penaluna	Brad Lahart

Fire Chief Responsibilities ***Section 1-B***

- Activates notification procedures and maintains communication with the City of Denton's response teams;
- Activates and supervises overall department recovery operations and Response Teams;
- Makes final determination to activate the City of Denton recovery plan;
- Has authority to call in all necessary resources to resolve problems in restoring critical functions to operational levels;
- Prioritizes work functions and recovery efforts;
- Supervises damage assessment of the City of Denton's primary site; and
- Organizes/supervises salvage operations.

Director of Public Affairs Responsibilities ***Section 1-C***

- Handles all media requests for interviews and keeps media informed of newsworthy developments;
- Responsible for approval of all client communication guidelines, status updates; and is
- Responsible for communicating with all support agencies.

Technology Services Leader Responsibilities ***Section 1-D***

- Coordinates Technology Services' recovery and operation of telephone, network, and telecommunications;
- Coordinates re-establishment of PC based applications, and network applications;
- Supervises the procurement of replacement equipment;
- Maintains communication with the City of Denton's Fire Chief on status of systems;
- Assists with Fire Chief on damage assessment as needed;
- Assists Fire Chief in recovery of department activities as needed; and
- Adds on-going Business Continuity Planning responsibilities.

Emergency Operations Center Manager Responsibilities ***Section 1-E***

- Maintains the employee call tree and updates the list quarterly or when necessary due to critical employee changes;
- Recommends restructure of the Recovery Management Team and the Department Response Teams when management and organizational structure changes occur at the City of Denton;
- Develops and coordinates scenarios to exercise the overall Business Continuity Plan and processes;
- Reviews the plan and scenarios annually and makes changes as necessary;
- Advises the Fire Chief and Response Team of assets and alternatives available, based on the emergency situation and the Emergency Operations Center Manager's understanding of the overall operations and needs;
- Assists Fire Chief in Business Continuity recovery of department activities as needed;
- Retrieves Off-Site Recovery Box;
- Updates the status line; and
- Maintains Recovery Log throughout the recovery effort.

Department Response Teams **Section 2**

These individuals are responsible for executing the recovery processes necessary for the continuity or recovery of specific department functions for their assigned department. These individuals report to the appropriate Department Response Team Leader for instructions on the logistics of the recovery process. Department Response Teams may be broken into sub-teams, each with their own leader, to facilitate a specific recovery effort. Refer to Part 2, "Departments" of the City of Denton Business Continuity Plan for details related to each specific department's recovery strategies. A listing of the members of the Response Teams and their emergency contact information can be found in the Employee Call Trees (refer to Part 5, "Call Trees").

The primary responsibilities of the members of these teams are as follows:

- Report to the alternate sites when instructed by their team leader;
- Organize and provide print services to the recovery effort;
- Execute the department recovery procedures for their area of responsibilities in the order of priority identified;
- Communicate the status of the recovery to the Response Team Leaders as needed;
- Identify issues or problems to be escalated to the management team for resolution;
- Support efforts to return to normal operations;
- Re-establish support operations affected by the disaster; and
- Identify replacement equipment or software needed for the recovery effort and to return to normal operations.

	Team Roles	Primary	Alternate
1.	Airport	Scott Gray	Chase Patterson
2.	Building Inspections	Emily Loiselle	Billy Ewton
3.	City Manager / Public Affairs	Rachel Wood/ Sarah Kuechler	Stuart Birdseye/ Ryan Adams
4.	Customer Service	Steve Prachniak	Cyndi Williams
5.	Economic Development	Jessica Rogers	Michelle Cunningham
6.	Electric	Jerry Looper	Brad Watts
7.	Facilities Management	Dean Hartley	David Saltsman
8.	Finance	Tony Puente	David Gaines
9.	Fire	Kenneth Hedges	Mike Penaluna
10.	Fleet Services	Terry Kader	Randy Tunnell
11.	Human Resources	Tiffany Thomson	John Whitmore
12.	Legal	Aaron Leal	Jerry Drake
13.	Library Services	Jennifer Bekker	Stacy Sizemore
14.	Municipal Court	Lorri Brighton	Yuri Ledezma
15.	Parks & Recreation	Gary Packan	Laura Behrens
16.	Planning	Scott McDonald	Richard Cannone
17.	Police	Frank Dixon	Frank Padgett
18.	Purchasing / Distribution Center	Lori Hewell	Laura Hermosillo
19.	Risk Management	Scott Payne	Tom Keel
20.	Solid Waste	Ethan Cox	Scott Lebsack
21.	Technology Services	Melissa Kraft	Cherie Reed
22.	Wastewater	Tiffany Sherrane	Kenneth Banks
23.	Water	Frank Pugsley	Kenneth Banks

Response Team Leaders' Responsibilities ***Section 2-A***

- Coordinates re-establishment of activities with priority given to their area of responsibility;
- Work with Technology Services Team, as necessary, throughout the recovery process to maximize resources and resolve problems;
- Establish and oversee manual interim procedures until automated processing capabilities are restored;
- Evaluate and verify that key files and automated processes are fully restored;
- Supervise contractors during the repair of facilities;
- Assist Recovery Management Team in recovery of department activities as needed;
- Supervise search of alternate temporary/permanent office space at the alternate recovery location; and
- In the event temporary or permanent relocation is necessary; supervise the movement of the applicable department to the alternate site and resumption of operations.

Human Resources Leader Responsibilities ***Section 2-B***

- Determine accountability of personnel during the catastrophic disaster;
- Assist Response Team Leaders with staffing issues and requirements;
- Assist in the needs of families suffering the loss of casualty victims; and
- Assist in the recovery of department activities as needed.
- Supervise and delegate responsibilities including:
  - Answering phones;
  - Making travel arrangements for recovery staff;
  - Keeping minutes of the status meetings; and
  - Distributing information as requested.
- Work with accounting, and other departments to track travel expenses to ensure administrative processes function smoothly during recovery;

PLAN ACTIVATION — CHAPTER 5

Emergency Alert — Section 1

In the event that a situation or disaster occurs at the City of Denton, the first person to become aware of the situation will contact the Emergency Operations Center Manager. The Emergency Operations Center Manager will contact the Fire Chief. The Fire Chief and the Emergency Operations Center Manager will then contact the Department Recovery Management Team Leader(s) to alert them that a disaster may be declared. The department manager and other necessary management will begin the initial damage assessment. The Emergency Operations Center Manager will update the status line during the initial damage assessment phase in an effort to inform team members of the alert status.

Damage Assessment — Section 2

During the Damage Assessment process, the Recovery Management Team will identify specifically who and what has been affected by the disaster. If physical damage to the site has occurred, refer to the "Damage Assessment Form" in Appendix 05. In addition to completing the Damage Assessment Form, if possible, damaged areas should be videotaped or photographed for insurance claim reporting purposes. The team will evaluate the event that has occurred and determine which recovery teams will be required to respond to the situation. The decision to activate the Business Continuity Plan will be made by the Fire Chief.

Notification Procedures — Section 3

Once a disaster has been declared and the decision has been made to activate the Business Continuity Plan, the Fire Chief will notify the Department Response Teams. Department Recovery Management Team members will be given instructions. It is the responsibility of the Department Response Team Leaders to coordinate appropriate notification procedures using the Emergency Notification Information found in Appendix 01, "Call Tree Notification Script". Team members need to be instructed to contact the Emergency Status Line at 940-349-8595 or, if necessary, the Emergency Operations Center for status updates. Refer to Appendix 02, "Alternate Site / Emergency Operations Center Information".

The Notification Script located in Appendix 01, "Call Tree Notification Script" should be used when contacting team members, particularly in the event of catastrophic circumstances. The nature and scope of the disaster may not be clearly defined at the time the decision is made to implement the Business Continuity Plan. It is important not to cause unnecessary panic among the families of team members. For this reason, as well as to prevent disclosure of the nature and scope of the problem to those outside of the City of Denton, it is imperative that information about the disaster be communicated to the team member only. **If the team member is not home, leave a message for team member to call the phone number at the emergency operations center and do not provide further details.**

Emergency Operations Center

Section 4

Once a disaster has been declared, the Emergency Operations Center will be activated. (Refer to Appendix 02, "Alternate Site / Emergency Operations Center Information".) The Recovery Management Team will report to the Emergency Operations Center. The Emergency Operations Center will be equipped with a copy of the Business Continuity Plan.

The primary Emergency Operations Center location for the City of Denton will be Fire Central, 332 E. Hickory Street.

In the event of a disaster in which the primary Emergency Operations Center location is not in suitable condition for the Response Teams to meet, or it is not possible to reach the building, then the initial Emergency Operations Center will be at the alternate site at 601 E. Hickory Street, in the Police Department Training Room.

RECOVERY COMMUNICATIONS CHAPTER 6

Employee Notification Section 1

In the event of an emergency, the Response Team Leaders will be notified by the Fire Chief, or the Emergency Operations Center Manager. The Department Response Team Leaders will be responsible for contacting employees within their respective departments. It is important that the "Call Tree Notification Script", listed in Appendix 01, is used when contacting employees regarding an emergency.

Emergency Contact List Section 2

The Emergency Operations Center Manager for the City of Denton is responsible for maintaining the local Emergency Contact List for the Recovery Management Team and the Department Response Team. The Emergency Operations Center Manager will update the list of team leaders and alternates on a regular basis or when mandated by personnel changes.

Internal Department Communications Section 3

Initial notification to employees will be made using the Employee Call Trees (refer to Part 5 "Call Trees"). Employees will then need to utilize the status line for updates and further information. To reach the Emergency Status Line, dial 940-349-7823

The Emergency Status Line will be updated, on a regular basis, with the status of the recovery process. All City of Denton employees are expected to keep themselves informed of the recovery status by calling this line periodically. Radio Station 88.1 FM, KNTU will broadcast updates. When necessary, the Recovery Management Team members, or their delegates, will contact Department Response Team members and other employees to provide updates and instructions. It is city policy that disaster and recovery information be communicated directly to employees, and not to family members or friends. Refer to Appendix 01, "Call Tree Notification Script", for more information.

Director of Public Affairs - Media Section 4

The Recovery Management Team member responsible for external relations will handle all media communications. The main contact is the Director of Public Affairs at the Emergency Operations Center. Refer to Appendix 02, "Alternate Site / Emergency Operations Center Information" and to the Employee Call Trees in Part 5, for emergency contact information.

It is essential to the welfare of the city and its employees that all media inquiries be directed to the Director of Public Affairs. ***Under no circumstances are employees to provide information to any media representative.***

Director of Public Affairs - Customers/Citizens Section 5

Employees who talk with customers and/or citizens as a part of their normal business day will be provided a statement regarding the recovery effort. It is crucial that everyone iterates the same message. Therefore, do not divulge information beyond the statement provided. Any individual not satisfied with the response provided will be referred to the Director of Public Affairs.

Problem Management Section 6

Any problem encountered that could delay the recovery of any critical function, and cannot be resolved by the Department Response Team, must be brought to the attention of the Recovery Management Team immediately. A special meeting of the Recovery Management Team will be held to determine a course of action to resolve the issue. It is essential to the success of a recovery effort that problems be assessed and when necessary, escalated quickly to avoid unnecessary difficulties or additional downtime. The EOC Manager will be responsible for maintaining a Recovery Log that will include recovery management meeting notes and issues tracking. Refer to Appendix 06, “Recovery Log”.

RECOVERY RESOURCES AND REQUIREMENTS CHAPTER 7

Off-Site Recovery Box Section 1

A box containing pertinent documents and other materials necessary to facilitate the recovery and restorative process is maintained at the City of Denton's off-site storage facility.

In the event of a disaster, it is the Emergency Operations Center Manager's responsibility to recall the Recovery Box from off-site storage at Fire Station 7 as soon as an Emergency Operations Center has been designated. However, several other people are authorized to recall this container. For information on how to retrieve the box, please refer to Part 3, Chapter 4, Section 5, "Off-Site Storage Recall Procedures".

Functions, Applications, and Risk Classifications Section 2

Functions and applications will be recovered based on their risk classification that has been determined by the departments and executive management. Refer to Appendix 11, "Functions, Applications, and Priorities", for a complete list of each departments' functions, their risk classifications, and a listing of dependent applications.

Telephone Re-Routing Requirements Section 3

All department main phone numbers will be re-routed to their designated recovery sites, as outlined in the overviews of the department's recovery plans in Part 2 of this document. This is the responsibility of the Technology Services Team. More information on telephone re-routing can be found in the Technology Services section (refer to Part 3, Chapter 6, Section 1 for detailed re-routing instructions).

Mail Re-Routing Requirements Section 4

In the event of a disaster in which the City of Denton's departments are relocated to an alternate site, successful recovery and re-routing of mail services will be critical to the recovery of department operations. Purchasing Department will be responsible to ensure that mail service recovery is accomplished and that problems are addressed and resolved as quickly as possible. There are detailed instructions and information about City of Denton's mail operations in Appendix 08, "Mail Re-Routing Requirements".

Employee and Equipment Requirements Section 5

Department equipment and employee requirements are detailed in each department section of the Business Continuity Plan. A comprehensive summary tallying the number of employees, equipment needs, and space requirements for all City of Denton departments is included in Appendix 10, "Critical Resources Summary".

DEPARTMENT	ALTERNATE LOCATION
Airport	Fixed Base Operator, portable trailer, FAA to provide portable tower
Building Inspection	Telecommuting and CHE Parks Admin. Conference Room
City Manager Office	Police Chief's Conference Room & Jury Room
Reprographics	Service Center
Web Person	Technology Services
Channel 26	Development Services
PIO	CHE Parks Admin. Conference Room
Document Depot	North Branch Library
On-Site Recovery Team	Will be mobile
Customer Service	Solid Waste Landfill
Denton Municipal Electric	Backup Control Center
Economic Development	Development Services
Facilities Management	Vacant COD facility or internal conference/training room. Portable building moved to site as soon as possible
Finance Admin	City Hall Conference Room or Purchasing Conference Room
Fire	Basement Conference Room at City Hall
Fleet Services	Landfill Garage and Facilities Management
Human Resources	City Hall Basement
Legal	Service Center Training Room (Legal Point of Presence)
Library	Alternate functional Library facility
Municipal Court	City Council Chambers
Parks	Any available Parks Facility
Planning	Facilities Management or one of the Libraries
Police *PD Admin.*	MLK Recreation Center
911 Dispatch	Police Training Room by the Jail
Jail	Denton County Jail
Document Recovery	North Branch Library
Purchasing/Distribution Ctr	Purchasing at City Hall / Distribution Center at Pole Yard
Risk Management	City Hall Accounts Payable or Finance Conference Room
Solid Waste	Modular Building (DCTA building), Biodiesel Office, Scale House
Water Reclamation	Pecan Creek Plant

See Appendix 02, "Alternate Site / Emergency Operations Center Information", for alternate site contact information. This information includes the contact name of the person at the site to notify in the event of a disaster, the Emergency Operations Center phone and fax numbers, and directions to the recovery site. For specific site recovery information, please refer to the department business continuity plan overviews found in Part 2 of this document.

HUMAN RESOURCE MANAGEMENT CHAPTER 8

Injury to Employee Section 1

If an employee sustains an injury because of the declared emergency or during the recovery process, the first step is to seek medical attention for the injured employee as quickly as possible. Every employee should be made familiar with the emergency numbers in their local area for contacting police, fire, or ambulance services.

Once medical attention has been provided for the injured employee, it is important to quickly notify the Risk Management Representative on the Recovery Management Team so that appropriate family notifications and paperwork can be completed. Initial information to be provided is as follows:

- Employee Name;
- Employee's Department;
- Location at time of injury;
- Nature of injury (if known);
- Time injury occurred; and
- A brief description of circumstances under which the injury occurred.

This information needs to be provided to the Recovery Management Team as soon as possible and may be faxed to the Emergency Operations Center. A form found in Appendix 07, ("Employee Injury Report Form") can be used to assist you in preparing this information. Also, refer to City of Denton Policy & Procedures Manual, Reference 409.1, 409.2, and 409.3 for detailed instructions on occupational injury benefits.

Employee Fatalities Section 2

In the event that an emergency results in the death of one or more employees, it is imperative that this information be communicated to the Human Resources Leader on the Recovery Management Team as quickly as is reasonably possible. The Human Resources Leader will contact and work with Human Resources to communicate with and assist the family. In this type of a situation, it is critical that the Recovery Management Team is notified. Human Resources will effectively communicate information to family members as quickly and compassionately as possible under the circumstances. They also have the ability to provide support services to the family if needed, and begin the process required to provide financial assistance to the family from insurance or other City of Denton benefits. A phone call to the Emergency Operations Center or Human Resources Representative should be made as soon as possible. (Refer to Appendix 02, "Alternate Site / Emergency Operations Center Information"). Initial information to be provided is as follows:

- Employee Name;
- Employee's Department;
- Location at time of death;
- Time death occurred;
- Brief description of circumstances; and
- Where deceased has been taken (if known).

Family Section 3

The City of Denton recognizes that in order for employees to respond to the department's need in a disaster situation, the needs and hardships placed on the families of the Recovery Management Team and Response Teams must be considered and addressed as well. For employees to give their best to the city at a time when it is most needed, employees expect to have a level of comfort that their family members are safe and the employee's absence during the recovery effort will not place undue hardship on them. Family issues should be brought to the attention of the Human Resources Leader as soon as possible.

Travel Arrangements Section 4

Travel arrangements needing to be scheduled during the ongoing recovery effort will generally be made by the appropriate Response Department Representative.

Expense Reports Section 5

The normal procedures for submitting expense reports will continue during the recovery effort. Every effort will be made to expeditiously reimburse the employee for out-of-pocket expenses. Copies of expense report forms are included in the Off-Site Recovery Box.

Cost Center Section 6

Any recovery-related expenses need to be designated to an account set by the Finance department. This number will be designated as the City of Denton's disaster recovery project specific to the given disaster. Invoices and receipts should be marked with that number titled 'Disaster Recovery Expense'.

BUSINESS CONTINUITY PLAN EXERCISE AND MAINTENANCE CHAPTER 9

Plan Exercise Section 1

A Business Continuity Plan exercise is necessary to ensure the adequacy and completeness of the plan. A successful exercise demonstrates that the city has a documented plan in place, which permits the continuous or timely recovery of critical city functions in the event of an interruption.

Definitions *Section 1-A*

Call Notification Exercise: successfully contacting the employees or other persons as noted on the city emergency list as required to maintain/resume critical department functions. This may include questions to participants for establishing that all participants understand their roles when notified of an emergency.

Walk-Through Exercise: a planned meeting to discuss the recovery of all critical functions during a department interruption, as documented in the department recovery plan. Emphasis is on management direction and organization, communication, feasibility of systems and telecommunications, availability of alternative sites, retrieval of critical information, supplies, and other reasonable equipment needs.

Simulated Exercise: respond to a simulated department interruption by performing all the department recovery responsibilities/action items up to the point of actually occupying the designated alternate site.

Actual Exercise: a fully implemented exercise of the recovery strategies developed in the Business Continuity Plan. This includes the use of an alternative location, if approved by upper management.

Exercise Roles and Responsibilities *Section 1-B*

1. The Emergency Operations Center Manager will work with the City of Denton's department managers to design, schedule, and conduct a call notification, walk-through, and simulated, and/or actual exercise of the Business Continuity Plan at least annually. See Appendix 12, "Business Continuity Plan Pre-Exercise Overview", for a template to assist with this process.
2. The City of Denton's Emergency Operations Center Manager and department management will develop a pre-exercise evaluation document; see Appendix 12, "Business Continuity Plan Pre-Exercise Overview", prior to conducting an exercise. This document must have all measurable objectives, scenarios being evaluated, scope of the exercise, and individuals responsible for conducting the exercise.
3. The Emergency Operations Center Manager and each City of Denton department manager must keep detailed notes during the exercise process and document the results. This information will be compiled into a "Business Continuity Plan Post-Exercise Summary" that will be sent to appropriate executive management and used to enhance and update the City of Denton Business Continuity Plan. Refer to Appendix 13, "Business Continuity Plan Post-Exercise Summary".
4. All Employees are to adhere to policies, procedures, and standards applicable to the Business Continuity Plan during the exercise in their areas and are expected to participate as requested by management.

Plan Maintenance — Section 2

Due to the dynamic and constantly changing environment of the City of Denton, Business Continuity Plan maintenance is necessary to ensure that the entire plan remains up to date and viable. Regular maintenance ensures that the plan addresses the current department requirements.

Maintenance Roles and Responsibilities — *Section 2-A*

1. The Emergency Operations Center Manager is responsible for initiating and overseeing annual updates to the Business Continuity Plan.

2. Department Managers are responsible for providing update information to the Emergency Operations Center Manager as requested. Managers are expected to provide accurate information in a timely fashion during each update period. Managers are also expected to review and sign-off on their section of the plan after each update.

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

AIRPORT CHAPTER 1

Business Unit Overview Section 1

Airport provides air navigation, facilities, air traffic control, physical security, ground support services to commercial cargo, corporate business aviation, charter companies, air ambulance, and airlift support (in the event of a crisis).

Business Unit Internal / External Interdependencies Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Texas Department of Transportation	External	Obtain and disburse federal and state funds
Federal Aviation Administration	External	Air Navigation, Airspace, and Airport Safety assistance
RVA	External	Air Traffic Control Contractor
Denton Police Department	Internal	Airport Security
TSA	External	Transportation and Airport Security
US Jet Center	External	Ground Support Services

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
AA = Recovery time within 2 hours
A = Recovery time within 4 hours
B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Physical Security	AAA	Scott Gray	Chase Patterson
Air Traffic Control	AA	Bill Hughes – RVA	Tower Manager on Duty
Ground Support Services	AA	Brian Walker – US Jet Center	FBO Line Service on Duty
Facility Management & Maintenance	AA	Chase Patterson	Walter Warschun
Air Navigation	AA	Scott Gray	Chase Patterson
Airport Administration	A	Scott Gray	Leanne Hood
Reporting	C	Scott Gray	Chase Patterson

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records (name)	Primary Location	Backup Location
Airport Emergency Plan	Airport Terminal	Electronic Copies on Network
Tower, Radio, Navigation Equipment Licenses	Airport Terminal	Electronic Copies on Network
Grants	Airport Terminal	Electronic Copies on Network
Personnel Files	Airport Terminal	Electronic Copies on Network
Fuel Storage Permit	Airport Terminal	Electronic Copies on Network
Storm water pollution prevention plan	Airport Terminal	Electronic Copies on Network

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
FAA and NOAA Computers	Airport Tower	Unknown
Air Traffic Control PC's	Airport Tower	Unknown

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:

Fixed Base Operator, portable trailer, FAA to provide portable tower

Desk Phones:

Extensions 7736, 7738, 7744, and 7722 forwarded to cell phones

PC's:

Four (4) at Alternate work location

Electronic data:

None identified

Other:

One (1) black and white copier, two (2) hand held radios, one (1) fax machine (7289), document depot site (North Branch Library) needed by the next business day

CITY OF DENTON / TECHNOLOGY SERVICES BUSINESS CONTINUITY PLAN

BUILDING INSPECTIONS CHAPTER 2

Business Unit Overview Section 1

Issue building permits, inspects new and altered structures for compliance, and inspects establishments providing food to the public. This department is responsible for administration of the health, safety and welfare of the public.

Business Unit Internal / External Interdependencies Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Fleet Services	Internal	Facilitates transportation needs for inspectors

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
AA = Recovery time within 2 hours
A = Recovery time within 4 hours
B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Building Inspections	AA	Scott McDonald	Emily Loiselle
Record Keeping (Trak-It)	C	Glenda Gailliard	Emily Loiselle
Health Inspections	D	Kevin Cummings	Emily Loiselle
Issue Building Permits	E	Scott McDonald	Emily Loiselle
Building Plan Review	D	Emily Loiselle	Amber Rodgers
Fire Inspections	E	Brad Layhart	Tim Ryan

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records	Primary Location	Backup Location
LT Plan Storage	Dev. Services	CHE-Parks Admin Conf. Rm.
ST Plan Storage	Dev. Services	CHE-Parks Admin Conf. Rm.
Address Files	Dev. Services	CHE-Parks Admin Conf. Rm.
Project Dox/Laserfiche		

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
None Identified		

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:
Telecommuting and CHE Parks Administration conference room

Desk Phones:
One (1) in CHE Parks Administration conference room

Cell phones:
Six (6) already issued

PC's:
Six (6) already issued

iPads:
Six (6) already issued

Electronic data:
Trak-It / ProjectDox / Laserfiche

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

CITY MANAGER'S OFFICE / PUBLIC AFFAIRS — CHAPTER 3

Business Unit Overview — Section 1

CMO posts legal notices, acts as liaison between Council and staff, keeps official records, facilitates Council operations, and delivers reports on policy decisions. Public Affairs disseminates public notices, manages the City's television channel DTV, City website and emergency information webpage, and manages internal and external communications.

Business Unit Internal / External Interdependencies — Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Legal	Internal	Provides advice and legal resource to council
Charter, Verizon, Grande Cable	External	Provides personnel and video feed

Business Unit Process Overview — Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
AA = Recovery time within 2 hours
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B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Posting Legal Notices	AAA	Rosa Rios	Zolaina Parker
Official Records	AAA	Rosa Rios	Zolaina Parker
Public Notice Dissemination	AAA	Sarah Kuechler	Ryan Adams
Liaison Between Council & Staff	AA	Rachel Wood	Stuart Birdseye
DTV	AA	Billy Matthews	Brian Plinck
Internal/External Communications	AA	Sarah Kuechler	Ryan Adams
Council Operation & Meetings	A	Rosa Rios	Zolaina Parker
City Website	AA	Sarah Fullwood	Justin Harmon
Deliver/Report Policy Decisions	B	Rosa Rios	Zolaina Parker
City Emergency Webpage	A	Sarah Fullwood	Justin Harmon

Documents and Electronic Data Critical to the Recovery Process Section 4

Documents / Vital Records	Primary Location	Backup Location
Historical documents	City Hall	
Shell documents for agendas, press releases, etc.	Network Server	
Switchboard data	Network Server	

Required Resources for Survival / Return to Normal Operations Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:
See Section 6

Desk Phones:
Nine, (four should already be available in locations where people are moving).

Public Affairs: 11 Phones
CMO: 12 Phones
Cell phones:
Already issued.

PCs:
Nine, Public Affairs already has one laptop, CM, ACM's and Director have laptops.
Public Affairs: 13 PCs, 9 Laptops. (Please contact Ryan Adams and Billy Matthews, as they have multiple pieces of technology that aren't in use or to be used by the new hire in the Public Affairs Suite)
CMO: 7 PCs, 5 Laptops
Electronic data:
LaserFiche

Documents:
Network Server

Details on the Alternate Recovery Location(s) **Section 6**

DIVISION	RELOCATION	PHONES	PC'S	SOFTWARE
City Manager Office	Police Chief's Conf. Room & Jury Room	Four (4) Ext.8307 & 8560 to Conf. Room, 8309 & 7717 to Jury Room	Three (3)	
Reprographics	Service Center	Use existing	Use existing	
Web Person	Technology Services	One (1)	One (1) prefers Macintosh	
Channel 26		Borrow Equip from Charter Communications	Borrow Equip from Charter Communications	
Public Affairs	Parks Admin Conf. Room	Three (3) with Ext. 8509, 8172, & 8171forwarded	Three (3) PC's	
Document Depot	North Branch Library	One (1) cell phone	One (1) PC	
On-Site Recovery Team	Would be mobile	One (1) cell phone		

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

CUSTOMER SERVICE CHAPTER 4

Business Unit Overview Section 1

Provides cashiering function for multiple city departments, customer services information and bill inquiry, collecting for utilities, accounts receivable, credit and collections, revenue assurance, and creates and distributes utility bills.

Business Unit Internal / External Interdependencies Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Wells Fargo Bank	External	Banking services
Utilitec	External	Utility bill mailing services
ADT	External	Physical security
Elavon	External	Merchant Services
NorthStar	External	Utility CIS
Paradigm	External	Solid Waste CIS
Paymentmate	External	Point of Sale Check/Card Processing
Exceleron	External	Pre-Paid Metering
US Payments	External	KIOSK
Paymentus	External	Payment Gateway/Alerts

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
AA = Recovery time within 2 hours
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B = Recovery time within 8 hours (may span 2 business days)
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D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Customer Services Information Number/Switchboard	AA	Steve Prachniak	Christa Foster
Cashiering	D	Angela Nelson	Steve Prachniak
Service Connects/Disconnects	B	Kim Hestand	Rita Herrera
Billing	B	Kim Hestand	Rita Herrera
Credit & Collections	E	Autumn Perkins	Christa Foster
Disconnects of Delinquent Accounts	F	Autumn Perkins	Christa Foster
Accounts Receivable	D	Autumn Perkins	Christa Foster

Accounts Receivable/Lock Box/Fidelity Express	B	Angela Nelson	Steve Prachniak
Reporting	F	Cynthia Williams	Christa Foster

Required Resources for Survival / Return to Normal Operations Section 4

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:
Solid Waste Landfill

Desk Phones:
Twenty-Four (24) desk phones, 20 tied to ACD group of 8700

Cell phones:
Already issued

PC's:
Thirty (30): 20- Agent PC's, 10- for other functions

Electronic data:
NorthStar, Wells Fargo, Lockbox, Fidelity Express, Paymentmate, Paradigm, Vista Point, Exceleron, US Payments (KIOSK)

Other:

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

DENTON MUNICIPAL ELECTRIC **CHAPTER 5**

Business Unit Overview — Section 1

DME provides the citizens of Denton with reliable electric service with 24-hour on-call personnel to meet our customers' needs.

Business Unit Internal / External Interdependencies — Section 2

Interdependency	Resource Type	Support / Service Provided
ERCOT	External	Facilitate electric transmission recovery
TMPA	External	Facilitate electric distribution recovery
Garland Power and Light	External	Provides temporary personnel/perform TOP Function
Motorola	External	Provides Communication Support
Denton County Amateur Radio Association	External	Provides Disaster Support
Frontier	External	Provides PRI support
TRE (Texas Reliability Entity)	External	Provide Status
Department of Energy	External	Provide Status

Business Unit Process Overview — Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
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A = Recovery time within 4 hours
B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
System Operations	AAA	Jerry Looper	Jonathan Love
Energy Management	AAA	Stephen Johnson	Jose Gaytan
Utility Dispatch	AA	Jerry Looper	Jonathan Love
Technology Services – Outage Management System	AA	Sandra Allsup	Melissa Kraft

Public Safety Radio Communications	A	Darrell Washington	Melissa Kraft
Materials Management	D	Cassandra Ogden	Laura Hermosillo
Disconnects/Reconnects	E	Brandon Hamby	JR Richardson
Meter Readings	E	Brandon Hamby	JR Richardson

Documents and Electronic Data Critical to the Recovery Process **Section 4**

Documents / Vital Records	Primary Location	Backup Location
SharePoint access to DME site	CHE Data Center	Spencer Data Center
S:\Electric	Spencer Data Center	CHE Data Center
EMO File Server	Spencer Data Center	CHE Data Center

During the Mission Critical Process Continuity Phase of Operations (0 to full recovery): Section 5

Alternate Work Location:

Backup Control Center and Data Closet (City Hall East)

Desk Phones:

Three (3) phones available in Backup Control Center and Data Closet

Cell Phones:

(1) Phone provided by DME TS for the QSE.

PCs:

Two (2) City PCs
Three (3) SCADA PCs
One (1) Camera PC
One (1) Laptop Dock (user responsible for bringing laptop from Primary site)

Electronic Data not Maintained by DME but Required for Business Continuity:

NorthStar System

Documents:

DME Policies and Procedures for Operations, Dispatch and Energy Management

Personnel: On-shift System Operator, On-shift City Utilities Dispatcher, and On-Shift Market Operations Operator.

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

ECONOMIC DEVELOPMENT **CHAPTER 6**

Business Unit Overview — Section 1

Works with developers on economic development project initiations, coordinates recruitment efforts with the Chamber of Commerce to attract new companies to Denton, manages international relations with sister city, maintains relationships with existing businesses for retention and expansion efforts, oversees the public art and cultural district program, and promotes downtown revitalization efforts.

Business Unit Internal / External Interdependencies — Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Accounting	Internal	Track expenditures for grants and tax abatements
Chamber of Commerce	External	Provides temporary assistance with some processes

Business Unit Process Overview — Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
AA = Recovery time within 2 hours
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B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Business Retention	C	Jessica Rogers	Michelle Cunningham
Development Project Initiation	D	Jessica Rogers	Michelle Cunningham
Downtown Revitalization	D	Julie Glover	Christina Davis
International Relations	E	Michelle Cunningham	Jessica Rogers
Business Recruitment	F	Jessica Rogers	Michelle Cunningham

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records	Primary Location	Backup Location
Tax Abatement Contracts	City Hall	LaserFiche
Government Grant paperwork	City Hall	LaserFiche
Incentive program documentation	Department S Drive	

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
None Identified		

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:
Development Services Building

Desk Phones:
Five (5) phones, X-7776 and X7531 forwarded to two of these phones.

Cell phones:
Already issued

PC's :
Five (5) PC's in basement of City Hall West conference room, with standard load

Electronic data:
LaserFiche
Department S Drive

Documents:
Economic Development Incentive Files

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

FACILITIES MANAGEMENT **CHAPTER 7**

Business Unit Overview — Section 1

Provides complete facilities management for the city including, but not limited to, physical security (IDs and card access), maintains alarms, and manages all buildings maintenance and emergency needs.

Business Unit Internal / External Interdependencies — Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Technology Services	Internal	Camera System
ABE	External	Security System Support
Schneider Electric	External	HVAC System Support
Enviromatics	External	HVAC System Support
Technology Services & TMA	Internal/Web Based & External	Work Order System Support

Business Unit Process Overview — Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
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B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Physical Building Security	A	Christian Garcia	Dawn Wilson
Facilities Administrative Services	B	Jennifer Wilcox	Dawn Wilson
HVAC Controls	D	David Saltsman	Dean Hartley
Work Order Process	E	Dawn Wilson	Dean Hartley

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records	Primary Location	Backup Location
As-Builts/Building Floor plans*	FM	S;Drive
Asbestos Reports*	FM	S;Drive
ADA Reports*	FM	S;Drive

***Some are in Laser Fiche**

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
HVAC Management System	FM	Scheduled backups on 2 HVAC PC's

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:

A vacant COD facility or any available internal conference/training room. A temporary portable building would be moved to the site as soon as possible.

Desk Phones:

Extension 7200 forwarded to a cell phone or alternate location ext.

Cell phones:

All personnel, currently 18

PC's:

Four (4) PCs: one (1) for Security System, one (1) for HVAC system, and two (2) for TMA, at the Facilities Management alternate location or in the computer room of Technology Services in City Hall East with VNC and the addition of one unidesk.

Electronic data:

Security, HVAC, and TMA (stored on TMA's server – web base) system backup.

Documents:

Please see vital document list in Section 4.

Personnel:

All Facilities staff plus any personnel needed to restore vital systems previously listed.

Other:

CITY OF DENTON / TECHNOLOGY SERVICES BUSINESS CONTINUITY PLAN

FINANCE CHAPTER 8

Business Unit Overview Section 1

Finance is responsible for payroll, budget, job cost, payments to vendors, accounts receivable, timekeeping management, and financial reporting for the organization.

Business Unit Internal / External Interdependencies Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Customer Service	Internal	Accounts receivables (Utility Payments)
Wells Fargo	External	Banking services
Materials Management	Internal	Mail Delivery

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
AA = Recovery time within 2 hours
A = Recovery time within 4 hours
B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Banking	B	Nancy Towle	Randee Klingele
Payroll	B	Cindy Hartman	Donna Bush
Timekeeping	B	Cindy Hartman	Donna Bush
Accounts Payable	E	Melanie Beard	Harvey Jarvis
Reporting	F	Harvey Jarvis	Cody Wood
Budgeting	F	Nick Vincent	Dan Galizia
Job Cost	F	Harvey Jarvis	Brian Hogan

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records	Primary Location	Backup Location
Check Stock	Reprographics	Vendor
Investment Transactions	City Hall Conference Room	Purchasing Conference Room
Time Keeping	City Hall Conference Room	Purchasing Conference Room

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
None Identified		

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:
City Hall Conference Room or Purchasing Conference Room

Desk Phones:
Four (4) phones

Cell phones:
Already issued

PC's:
Four (4) PC's with accounting software loaded

Electronic data:
JD Edwards

Documents:
None

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

FIRE/EOC CHAPTER 9

Business Unit Overview — Section 1

The Fire Department provides fire emergency response, emergency medical care, hazardous materials response, fire investigations, fire inspections, bomb squad, Emergency Operations Center and emergency management, warning sirens, and public education.

Business Unit Internal / External Interdependencies — Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Fleet Services	Internal	Vehicle repair and replacement
City of Fort Worth	External	Provides temporary personnel and mutual aid
Bureau of Alcohol, Tobacco, and Firearms	External	Provides investigative assistance
OnSolve (CodeRED)	External	Calls to Citizens
Denton County ESD1 – Argyle Station	External	ESD provides first response to Robson Ranch
Denton County	External	Provide Fire Protection Service
Denton County	External	Provide Ambulance Services

Business Unit Process Overview **Section 3**

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
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B = Recovery time within 8 hours (may span 2 business days)
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D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Fire Emergency Response	AAA	Brian Cox	Shift Battalion Chief
Emergency Medical Care	AAA	Brad Lahart	David Becker
Hazmat Response	AAA	Mike Tucker	Brian Cox
Bomb Response	AAA	Mike Tucker	David Becker
Emergency Operations Center	AAA	Mike Penaluna	Brian Cox
Fire Investigations	B	David Becker	Tim Ryan
Fire Inspections	B	David Becker	Tim Ryan
Public Education	F	David Becker	David Boots
Warning Sirens	F	Mike Penaluna	Brian Cox
EMS Billing	C	Christine Taylor	Tammy Peal

Documents and Electronic Data Critical to the Recovery Process **Section 4**

Documents / Vital Records	Primary Location	Backup Location
As-Built plans for Buildings	Denton Development Center	
Criminal Investigations (adult & juvenile)	Central Fire	
Employee Records	Central Fire	
Training Files	Central Fire	
NED Files	Central Fire	
Drug Enforcement Files	N/A	
Calibration Records	Central Fire	
TDH Certifications	Central Fire	
Disaster Declarations	Central Fire	City Hall - Legal & City Secretary
Grant Paperwork	Central Fire	City Hall - Finance
Homeland Security Purchase Receipts	Central Fire	City Hall - Finance

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location for Fire Administration:
Basement Conference Room of City Hall

Alternate Work Location for the Emergency Operations Center:
Training Room of Fire Station #7

Desk Phones:
Five (5) desk phones
Extensions 8840 would need to be transferred to a desk phone at this location and 8841 to a fax machine.

Cell phones:
Personal cell phones

PC's:
Five (5) PC's

Electronic data:
VisionAir
TrakIt
CAD
LaserFiche

Documents:
See Section 4

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

FLEET SERVICES CHAPTER 10

Business Unit Overview — Section 1

Provides maintenance and repair of all city vehicles, fuel supply to all vehicles owned by the city, provides counter sales of automotive parts and miscellaneous equipment, and management of the fleet replacement process.

Business Unit Internal / External Interdependencies — Section 2

Interdependency	Resource Type	Support / Service Provided
NAPA Auto Parts	External	Parts supplier
Martin Eagle Fuel	External	Fuel supplier

Business Unit Process Overview — Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
AA = Recovery time within 2 hours
A = Recovery time within 4 hours
B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Fuel Supply and Services	A	Brad Holland	Mayela Vasquez
Vehicle Maintenance & Repair	B	Terry Kader	Randy Tunnell
Counter Sales	B	NAPA (BJ Jones)	Paul Schlebach

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records	Primary Location	Backup Location
No Documents Identified		

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
No Data Repositories Identified		

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:

Landfill Facility and Facilities Management

Desk Phones:

8729 Forward to 940-390-0226
8457 Forward to 940-390-6116
8432 Forward to 940-390-6116
8422 Forward to 940-783-1083
8424 Forward to 972-979-6690
8410 Forward to 214-384-1509
8442 Forward to 214-862-5809

Cell phones:

Already issued

PC's :

Three (3) at Facilities Management

Electronic data:

Internet Access, Faster System, EJ Ward, JDEdwards

Documents: None

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

HUMAN RESOURCES **CHAPTER 11**

Business Unit Overview — Section 1

Facilitates the hiring process, provides employee development and training, provides coaching and discipline advice, maintains compensation, benefits, and personnel records, interprets and develops HR related policies, provides interpretation and ensures compliance with employment-related laws, and administers employee recognition/incentive programs.

Business Unit Internal / External Interdependencies — Section 2

Other COD BU's, systems & applications, external vendors, key personnel, etc. required for event survival.

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Risk Management	Internal	Facilitate claims processing; coordinates insurance benefits; may provide assistance with personnel issues
Legal	Internal	Provides legal advice on disciplinary actions; reviews contracts
Payroll	Internal	Coordinates payment of wages to employees
TMRS	External	Employee retirement services
ICMA	External	Employee investment services
E-Screen	External	Drug testing services, post-offer physicals, and random drug screens
United Healthcare	External	Employee Assistance Program
Quick Search	External	Driver's License Checks Social security number verification and background checks

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
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B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Compensation & Payroll	B	Lisa Manning	Cindy Hartman (Payroll)
Benefits	D	Lisa Manning/Linda Kile	Rachel Staton
Personnel Records	D	Diena Flores	Tiffany Thomson
Coaching & Discipline	D	Tiffany Thomson	John Nelsen/Carri Byrd/April David
Hiring Process	D	Rachel Staton	Laura Melendez
Development & Training	F	John Nelsen	Tiffany Thomson
HR Policy Administration	F	Tiffany Thomson	Deby Skawinski
Employment Law Compliance	F	Deby Skawinski	Tiffany Thomson
Recognition/Incentive Programs	F	Diena Flores	Tiffany Thomson

Documents and Electronic Data Critical to the Recovery Process Section 4

Documents / Vital Records (name)	Primary Location	Backup Location*
Confidential written files	CHE	None
TWC claims	CHE	None
FMLA files	CHE	Data stored in a specialty software; paperwork is stored in hard copy files
Forms	S drive or SharePoint	

- If these files were destroyed, we would make a note in our destruction log as to what happened. We may be inconvenienced in the future without some of the information, but none are mission critical.

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
FMLA data	Benefits & Leave Coordinator's office computer	

Alternate Work Location:
Main City Hall basement

Desk Phones:
8340 and 8562 (TS main #) forwarded to Main City Hall basement

PC's:
Two (2) total PC's necessary in City Hall basement; would need laptops or PANO remote access for employees telecommuting (potentially 10 employees)

Electronic data:
JDE; LaserFiche

Documents:
See Section 4

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

LEGAL CHAPTER 12

Business Unit Overview Section 1

Litigation representation, document preparation, prevention of litigation, crisis legal support, and contract negotiations.

Business Unit Internal / External Interdependencies Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
CMO	Internal	Advisor of issues to Legal department
West's Legal Reference	External	Provides online legal reference materials (Browser based)

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

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D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Critical Legal Support	AA	Aaron Leal	Elaine Ortolani
Legal Point of Presence	AA	Aaron Leal	Elaine Ortolani
Document Preparation	A	Larry Collister	Elaine Ortolani
Contract Negotiations	C	Larry Collister	Elaine Ortolani
Litigation Representation	C	Jerry Drake	Elaine Ortolani
Prevention of Litigation	D	Jerry Drake	Elaine Ortolani

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records	Primary Location	Backup Location
Historical Documents	Server	
Law Library	City Hall	
Laserfiche	Server	
S: Drive Legal Folder	Server	

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
None Identified		

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:
Service Center Training Room (Legal Point of Presence)

Desk Phones:
Fourteen (14) Desktop Phones, 1 Conference Phone

PC's:
Fourteen (15) PCs in the Service Center Training Room (at least five of the fourteen should be laptops). All must have MS Office and a browser preloaded. Four (4) must have Adobe Acrobat Pro preloaded. At least five (5) PC or laptop must have full-size keyboard/mice.

Electronic data:
Internet Access

Documents:
None

Other: One copier with feed/sort/scan, one fax machine, one color printer, four (4) high-speed scanners with doc feeders, Wi-Fi access point available

CITY OF DENTON / TECHNOLOGY SERVICES BUSINESS CONTINUITY PLAN

LIBRARY CHAPTER 13

Business Unit Overview Section 1

Builds community by promoting lifelong learning, encouraging human connections, and sharing resources.

Business Unit Internal / External Interdependencies Section 2

Dependent upon Technology Services, Facilities Manager, Sierra Integrated Library System, Innovative Interfaces, Inc., AMIGOS Preservation Service, Bibliotheca, Bibliocommons.

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Facilities Management	Internal	Facilitate Building Recovery
Key Personnel (7): Director, Branch Managers (2), Technical Services Manager, Technology Librarian, Assistant Branch Manager - Special Collections, Librarian Archivist	Internal	Assigned to contact key vendors
Innovative Interfaces, Inc.	External	Facilitate Sierra Recovery
AMIGOS Preservation Service	External	Materials Recovery Services
Bibliotheca	External	Facilitate RFID Recovery
Bibliocommons	External	Facilitate Catalog Overlay Recovery

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
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D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Special Collections	AAA*	Laura Douglas	Chuck Voellinger/ Leslie Couture
Municipal Archive	AAA*	To Be Determined	Laura Douglas
Staff/Citizen Telephone Services	AA	Jennifer Bekker	Trey Ford
Administration	A	Jennifer Bekker	Stacy Sizemore /Kimberly Wells
RFID	A	Trey Ford	Jennifer Reaves
Technical Services	B	Jennifer Reaves	Hope Cockrell
Electronic System Notification	C	Trey Ford	Jennifer Reaves

*Immediate response is critical to the successful recovery of the materials

Documents and Electronic Data Critical to the Recovery Process **Section 4**

Documents / Vital Records	Primary Location	Backup Location
Genealogy, Denton Texas, and Texas collection	Emily Fowler	None
Personnel Files	Emily Fowler/Admin Office	HR
Library Board Minutes and Board Book	Emily Fowler/Admin Office/Director's Office	None
Municipal Archive	Emily Fowler	None

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:
Alternate functional library facility

Desk Phones:
Forward to alternate library facility

PC's:
Would use existing equipment at alternate location

Electronic data:
Innovative Interfaces, Inc

Documents:
See Section 4

Other:

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

MUNICIPAL COURT CHAPTER 14

Business Unit Overview Section 1

Provides court clerical functions and services to the Judge's Office, and provides enforcement of Class "C" misdemeanors.

Business Unit Internal / External Interdependencies Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Police Department	Internal	Assist in manual work-around process
Incode	External	Application support
Brazos	External	Application Support
Laserfiche	Internal	Application Support
PaymentMate	External	Application Support
Authorize.net	External	Application Support
Outlook	Internal	Application Support
Internet	External	Application Support

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

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E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Payment processing (online payments)	C	Lorri Brighton	Yuri Ledezma
Courts and Prosecution	D	Lorri Brighton	Yuri Ledezma
Case Processing/ Citation Import	D	Lorri Brighton	Yuri Ledezma
Reporting	D	Lorri Brighton	Yuri Ledezma
Customer Relations	D	Lorri Brighton	Yuri Ledezma

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records (name)	Primary Location	Backup Location
Case Files-150 legal storage boxes	City facility	Archive storage company

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
None Identified		

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:
City Council Chambers
`

Desk Phones:
Five (5) phone lines at a single location for the entire staff.

Cell phones:
Personal use cell phones are available if needed.

PC's:
Five (5) PC's with two printers, scanners, credit card/check processors

Electronic data:
Incode Software/Laserfiche/Internet PaymentMate/Software/Internet

Documents:
Case files/ Active and archived as needed.

CITY OF DENTON / TECHNOLOGY SERVICES BUSINESS CONTINUITY PLAN

PARKS CHAPTER 15

Business Unit Overview Section 1

Ground maintenance and management for most city properties, run recreation facilities, and various recreation activities.

Business Unit Internal / External Interdependencies Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Fleet Services	Internal	Assist with vehicle deployment and repairs
Facilities Management	Internal	Assist in emergency sheltering activities

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

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D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Field Services Emergency Response	AAA	Gary Packan	Drew Huffman
Emergency Sheltering	AA	Gary Packan	Laura Behrens
Recreation Facilities and Programming	C	Gary Packan	Laura Behrens
Grounds Maintenance	E	Drew Huffman	Gary Packan

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records (name)	Primary Location	Backup Location
Department's Central Files	File Room at CHE	None
Department's Project Files & Maps	File Room at CHE	None

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
None Identified		

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:

Parks Administration function would be relocated to other existing parks facilities

Desk Phones:

7275 forwarded to a selected location

PC's:

Replacement/Loaner computers
Phone/data drops and phone

Electronic data:

None Identified

Documents: See Section 4

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

PLANNING CHAPTER 16

Business Unit Overview — Section 1

Provides platting, zoning, and development review assistance.

Business Unit Internal / External Interdependencies — Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery

Business Unit Process Overview — Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
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E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process (name)	RTO	Primary Contact	Secondary Contact
Provide Info to Insurance Companies (Plats & Site Plans)	D	Scott McDonald	Richard Cannone
Permitting Services	D	Scott McDonald	Richard Cannone
Zoning	E	Scott McDonald	Richard Cannone
Planning	E	Scott McDonald	Richard Cannone
Platting	E	Scott McDonald	Richard Cannone
Site Plans	E	Scott McDonald	Richard Cannone
Demographic Information	E	Scott McDonald	Richard Cannone

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records (name)	Primary Location	Backup Location
Plats and plans prior to 2003	Development Services	Laserfiche

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:

Facilities Management or one of the Libraries (space for 5 people)

Desk Phones:

Five (5) Desk phones
Extension 8541 forwarded to one of the phones

Cell phones:

Already issued

PC's:

Five (5) PC's

Electronic data:

TrakIt, Project Dox & Laserfiche

Documents:

See Section 4

CITY OF DENTON / TECHNOLOGY SERVICES BUSINESS CONTINUITY PLAN

POLICE CHAPTER 17

Business Unit Overview Section 1

Police response, emergency services, public education, criminal investigations, street patrol, jail operation, 911 communications and dispatch, historical records, crime analysis, property and evidence, and animal control.

Business Unit Internal / External Interdependencies Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
DENCO 9-1-1	External	Provides temporary facilities, and 911 support
AT&T/Cingular	External	Provides wireless connectivity and phones

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
AA = Recovery time within 2 hours
A = Recovery time within 4 hours
B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Police Response	AAA	Operations Bureau	Support Bureau
911 Dispatch	AAA	Public Safety Communications	Technology Services
Street Patrols	AAA	Operations Bureau	Support Bureau
Public Information	AA	Office of the Chief of Police	Administrative Bureau
Jail Operations	A	Support Bureau	Operations Bureau
Property & Evidence	A	Support Bureau	Operations Bureau
Criminal Investigations	B	Support Bureau	Operations Bureau
Records Management	C	Administrative Bureau	Support Bureau
Animal Services	C	Animal Services	Customer Services
Public Education	D	Asst. Chief's Office	Support Bureau

Documents and Electronic Data Critical to the Recovery Process **Section 4**

Documents / Vital Records	Primary Location	Backup Location
RMS Backlog	Police Records	
TLETS/NLETS, Criminal History Records & Computer Aided Dispatch	Dispatch	
Impound Sheets	Records	
Field Documents	Records	
Evidence	Property Room	
Investigative Citations	Courts	

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
Sex Offender Database	Investigations	

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:

911 Dispatch – DENCO 9-1-1, 1075 Princeton, Lewisville TX
PD Admin – Martin Luther King Recreation Center
Jail – Denton County Jail
Document Recovery – North Branch Library

Desk Phones:

911 Dispatch –Eight (8) Dispatch Phones, Police Training Room by Jail, EOC at Central Fire Station
PD Admin – Ten (10) phones
Jail – none
Document Recovery – Two (2) phones

Cell phones:

Already issued

PC's:

911 Dispatch –seven (7) five (5) with Dispatch Load (from CD) – Seven (7) Laptop in vault with current load.
PD Admin – Twenty (20) PC's
Jail – Two (2) PC's
Document Recovery – Two (2) PC's

Electronic data:

VisionAir system, ICS CAD/RMS

Documents:

See Section 4

Other:

Portable Radios for Police & Fire or handwritten method for dispatching if communication devices are not available.

CITY OF DENTON / TECHNOLOGY SERVICES BUSINESS CONTINUITY PLAN

PROCUREMENT & COMPLIANCE CHAPTER 18

Business Unit Overview Section 1

Procurement & Compliance Purchasing/Warehouse are responsible for procurement, vendor crisis communication, coordinating receipt of goods, vendor management, and warehousing.

Business Unit Internal / External Interdependencies Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Various External Vendors	External	Assigned to contact key vendors

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

AAA = Recovery time within 1 hour
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A = Recovery time within 4 hours
B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process (name)	RTO	Primary Contact	Secondary Contact
Purchasing Back Office Process	AA	Lori Hewell	Jody Word
Distribution Center	AAA	Laura Hermosillo	Ronnie Shaw/Mark Swinscoe
Reporting	F	Lori Hewell	Suzzen Stroman

Documents and Electronic Data Critical to the Recovery Process Section 4

Documents / Vital Records (name)	Primary Location	Backup Location
Card Contact #'s & Access code	Purchasing - Kelly Smith	Lori Hewell
CC #"s (Excel Files)	Purchasing - Kelly Smith	Lori Hewell
Emergency Contact Binders	Purchasing and at Employee Residence	Lori Hewell, Jody Word

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
Credit Card Data	3rd Party Website	
Ionwave	3rd Party Website	
Docusign	3rd Party Website	

Required Resources for Survival/Return to Normal Operations **Section 5**

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:

Pole Yard for Distribution Center; City Hall for Purchasing

Desk Phones:

Three (3): Two (2) at City Hall, One (1) at Pole Yard, X-7100 forwarded to City Hall Accounting department, X-8437 forwarded to Pole yard

Cell phones (with internet access):

Seven (7): Materials Management Director, Karen Smith, Julia Winkley, Distribution Center on-call employee, Laura Hermosillo, Rebecca Hunter, Kelly Smith

Seven (7) short range radios

One (1) City Emergency Radio and base (located at DC currently)

PC's:

Seven (7) PC's with Purchasing and Distribution Center loads, Five (5) at City Hall, Two (2) at Pole Yard
Two (2) Printers, one for each location
Two (2) scanners, one for each location

Electronic data:

Oracle (JDE)
Internet Access
Shared "S" drive
Laserfiche
Microsoft Suite
Acrobat viewer

Documents:

None

CITY OF DENTON / TECHNOLOGY SERVICES BUSINESS CONTINUITY PLAN

RISK MANAGEMENT CHAPTER 19

Business Unit Overview Section 1

Risk Management administers insurance, employee benefits, workers' compensation, self-insured liability programs, safety programs/training, and processes claims for and against the city.

Business Unit Internal / External Interdependencies Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Texas Political Subdivisions	External	Workers' Comp claims third-party administrator
United Healthcare	External	Employee health insurance third-party administrator and EAP
Symetra	External	Employee Short-Term & Long-Term Disability Claims/Life Insurance Claims
Delta Dental	External	Dental insurance provider
United Healthcare	External	Vision insurance provider

Business Unit Process Overview Section 3

Recovery Time Objective (RTO) Classifications:

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C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
City Insurance Administration	C	Scott Payne	Tom Keel
Employee Benefits Administration	D	Linda Kile	Tiffani James
Workers' Compensation	D	Tom Keel	Eric Koenig
Liability Claims Processing	E	Eric Koenig	Tom Keel

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records	Primary Location	Backup Location
Employee & Retiree Benefit Files	File cabinets in RM	Some have been scanned into LaserFiche
Insurance Policies	Bookshelf in RM/Laserfiche	Insurance Consultant
Workers' Compensation Claim Files	Scanned into Laserfiche	Work Comp TPA
Liability Claim Files	ClearRisk RMIS and scanned into Laserfiche	Excel spreadsheet stored on network/Laserfiche

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
All electronic data in the City's possession is backed up by TS		

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:
City Hall (215 East McKinney Street) Accounts Payable area or Finance Conference Room

Desk Phones:
Two (2) desk phones, Ext. 7891 and Ext. 7807 forwarded to these phones

Cell phones:
Cell Phones, for Scott, Tom, Eric and Linda

PC's:
One (1) PC for general use

Electronic data:
Oracle (JDE)

Documents:
None

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

SOLID WASTE CHAPTER 20

Business Unit Overview — Section 1

Provides residential and commercial waste services, landfill management, and communication to regulatory agencies.

Business Unit Internal / External Interdependencies — Section 2

Interdependency	Resource Type	Support / Service Provided
Technology Services	Internal	Facilitate technology recovery
Customer Service	Internal	Provides customer data uplinked to Paradigm from NorthStar
Texas Commission on Environmental Quality	External	Regulatory Agency
North Texas Council of Governments	External	Provides inter-governmental coordination of assets for support

Business Unit Process Overview — Section 3

Recovery Time Objective (RTO) Classifications:

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Business Process	RTO	Primary Contact	Secondary Contact
Landfill/Scale House & Scales	A	JJ Tips	Trey Atterbury
Residential Solid Waste	B	Jonathan Freeney	David Sanders
Commercial Solid Waste	B	Brian George	Mike Hestand
Public Outreach and Education	C	Vanessa Ellison	
Brush & Debris Removal	C	Jonathan Freeney	David Sanders
Construction & Demolition	C	Bert Woods	Randall Morris
Home Chemical Collections	C	Art Garcia	Calvin Jennings
Solid Waste Administration	C	Brian Boerner	Eugene McKinnie

Documents and Electronic Data Critical to the Recovery Process — Section 4

Documents / Vital Records (name)	Primary Location	Backup Location
Landfill Documents (lab data, environmental monitoring, agency correspondence)	Solid Waste Admin Office	Scale house
Operations Management data	Solid Waste Admin Office, Scale house	Scale house

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
Physical Security Card System	Solid Waste Admin Bldg	Scale house

Required Resources for Survival / Return to Normal Operations — Section 5

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:

Landfill/(Customer Service) moves to Scale House
SW Administration moves to modular building
Field Teams would work from their City vehicles

Desk Phones:

Six (6) at these locations, Ext. 8080 & 8041 forwarded to Scale House

Cell phones:

Already distributed

PC's:

Six (6)

Electronic data:

Paradigm, NorthStar, Win Pak, Laserfiche, Virtual Merchant

Documents:

See Section 4

Other:

CITY OF DENTON / TECHNOLOGY SERVICES
BUSINESS CONTINUITY PLAN

WATER RECLAMATION **CHAPTER 21**

Business Unit Overview — Section 1

Provide wastewater treatment for all areas served by the City of Denton. Maintain wastewater infrastructure; manage improvements, and operation of all wastewater facilities. Dependencies include Electric (both internal and external), Engineering, and Purchasing, as well as outside dependencies with vendors listed below.

Business Unit Internal / External Interdependencies — Section 2

Interdependency	Resource Type	Support / Service Provided
Denton Municipal Electric	Internal	Facilitate Power Recovery for Pecan Creek Plant and many lift stations
Coserv	External	Facilitate Power Recovery for Robson Plant and several lift stations
TXU	External	Facilitate Power Recovery to several lift stations
Technology Services	Internal	Facilitate Technology Recovery
Purchasing	Internal	Facilitate Purchase of equipment and supplies
Key Transport	External	Facilitate hauling of sewage in case of incapacitated lift station or plant
Water Reclamation On-call personnel	Internal	First responder in case of any failure
Electronics and Electrician On-call Personnel	Internal	First responder for Electrical or Electronic Failure
Water Reclamation Operations Manager	Internal	Facilitate Contact with key outside vendors
Water Reclamation Superintendent	Internal	Oversee and Facilitate restructuring of personnel as needed.
SCADA Network and Security Administrator	Internal	Facilitate SCADA Recovery
Verizon	External	Facilitate phone service recovery
Sprint	External	Facilitate phone service recovery
AT&T	External	Facilitate phone service recovery
Fleet Services	Internal	Facilitate repairs of service vehicles
Electric Communications	Internal	Facilitate repairs to radio service
Pinkston or other pumper truck service	External	Facilitate hauling of sewage of incapacitated lift station
BARCO	External	Provide portable pumping equipment
Wastewater Collections Manager	Internal	Facilitate repairs to sewer lines and force mains
Hanson Pipe & Product Inc.	External	Facilitate Concrete Cylinder Pipe

Interdependency	Resource Type	Support / Service Provided
		Repair
Electrical/ Electronics Manager	Internal	Facilitate in-house repair of electrical and electronic equipment
Maintenance Manager	Internal	Facilitate repairs to critical equipment

Business Unit Process Overview **Section 3**

Recovery Time Objective (RTO) Classifications:

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D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Business Process	RTO	Primary Contact	Secondary Contact
Power recovery to plant	AAA	Water Reclamation Plant Personnel	Water Reclamation Plant On-Call Personnel/Electrical Personnel
Power recovery at large lift station (.5 MGD or larger)	AAA	Water Reclamation Plant Personnel	Water Reclamation Plant On-Call Personnel/Electrical Personnel
Power recovery at small lift station (less than .5 MGD)	AA-A	Water Reclamation Plant Personnel	Water Reclamation Plant On-Call Personnel/Electrical Personnel
Break in force main or gravity sewer line	B	Wastewater Collections	Wastewater Collections On-Call Personnel
SCADA system operation recovery	A-B	Water Reclamation Plant Personnel	Network SCADA Specialist
Phone Service Recovery	B	Water Reclamation Plant Personnel	Water Reclamation Plant On-Call Personnel/Electrical Personnel Technology Services
Pumper Truck Delivery	A	Wastewater Collections	Wastewater Collections On-Call Personnel
Purchase Agreements for equipment or supplies	AAA-AA	Purchasing Manager	Purchasing Department

Documents and Electronic Data Critical to the Recovery Process **Section 4**

Documents / Vital Records (name)	Primary Location	Backup Location
Blueprints of lift stations, and plants	Water Reclamation	Engineering
Blueprints of sewer lines	Wastewater Collections	Engineering
Permits and records	Water Reclamation	(records on server at plant)

Electronic Information not backed up by Tech Services	Primary Location	Backup Location
Infor EAM – CMMS Software	In4eam	PCAD/Backups
WIMS	VM(WIMS)	SecurityServer1 / SQLSERVER1
Historical Records	VM(HISTORIAN)	SecurityServer1 / SQLSERVER1
Logic and SCADA programming	Engineering VM(MAZER)/SQLSERVER3	PCAD/Backups / SQLSERVER1 / SQLSERVER2

During the Mission Critical Process Continuity Phase of Operations (0 to 3 business days), Technology Services will provide the items listed below to the designated "Alternate Work Location".

Alternate Work Location:

The Water Reclamation department would remain at the Pecan Creek plant. There are several buildings on site that could be used for office space and connectivity should the need arise. Wastewater Collections would also be located at Pecan Creek if their location were affected.

Desk Phones:

One (1)

Cell phones:

Already provided

PC's:

Four (4) (1 city, 3 SCADA)

Electronic data:

S: Drive, SCADA Server

Documents:

Drawings of area affected

Personnel:

Name	Title	Cell Phone Number
Rusty Willard	Water Reclamation Superintendent	940-297-7665
Jerry Lilley	Operations Manager	972-213-6168
Mark Ronje	Maintenance Manager	940-368-3585
Kenneth Moore	Electrical/Electronic Manager	940-391-0322
David Brown	Wastewater Collections Manager	940-453-6462
On-call Mechanic	Water Reclamation	940-390-1711
Operator on duty	Water Reclamation	940-390-6621
Electrician on-call	Water Reclamation	940-391-2411
Electronics on-call	Water Reclamation	940-391-3624
Casey Bowles	Water Distribution Manager	940-222-9956
Lori Hewell	Purchasing	
John Grubbs	SCADA Network and Security Ad.	254-466-4522

TECHNOLOGY SERVICES GROUP CHAPTER 1

Overview Section 1

The Technology Services Group at City of Denton is primarily responsible for the installation, maintenance and support of all network, computer and telecommunication services used at all City of Denton locations. Technology Services is also responsible for re-establishing and supporting the necessary technology outlined in this business continuity plan at an alternate business recovery location.

Depending upon the severity of the event, Technology Services would first try to re-establish operations in the City Hall East location that we currently occupy. Should this space not be available, the alternative recovery locations would be the basement of City Hall (phone and server room) and the DRP Site at Denton Municipal Electric.

This plan has been reviewed and approved by the Chief Technology Officer, Deputy City Manager, and the Denton EOC Manager.

City of Denton Critical Applications Description — Section 2

The following list describes City of Denton's critical applications, purpose and the business divisions using the correspondent applications that will be supported by the Disaster/Recovery Plan. Applications not listed will be supported as normal business and process failures.

Application Name	Division	Application Purpose
Adobe	City wide	Image reader and tool for agenda creation
AutoCAD	Eng/Utility	Civil Engineering Design of Water, Streets, and Electric
BitDefender	City wide	Virus protection (desktop)
Cartegraph	Eng/Utility	Work Order and Asset Management for Streets, Traffic, Wastewater Drainage, and Watershed
Cherwell	Tech Services	Helpdesk trouble ticket management solution
CityWorks	Water	Water infrastructure and work ticket management
Incode	Municipal Court	Municipal Court processing
ESRI	Engineering/Utility	City maps and interactive interfaces
Faster Web	Fleet	Vehicle and equipment management application
North Star (Harris)	Utility	Utility Billing and Customer Service
Incode	Municipal Court	Municipal Court processing
Intranet/Sharepoint/HUB	City wide	City of Denton Intranet services
JD Edwards (JDE)	Finance/HR	Accounting, Purchasing, and HRIS processing
LaserFiche	City wide	Imaging software and electronic records mgmt
MicroMain/TMA	Facilities	Facility work management/building system control
Microsoft Office 365	City wide	Desktop Office Solution
Microsoft SCCM	City Wide	Operating System images/Application packages, Windows Security updates, and Remote Access
Microsoft Windows	City wide	Desktop Operating System
Paymentus	City wide	Web and voice E-Payment processing solution
ProjectDox	Dev Services	Permitting and Electronic Plan Reviews
Rec1	Parks	Parks department class registration software
Sierra	Library Services	Library services software
Telogent	Water	Water Valve shutoff and control
Trak-It	Building Inspections	Code Enforcement and Building Inspection
Visionair	Public Safety	Public Safety database and dispatch services
Windows Exchange	City wide	File, print, and authentication services
Windows Exchange Outlook	City wide	Email services

TEAM ORGANIZATION CHAPTER 2

It is anticipated there are combinations of technology personnel necessary in any specific department recovery scenario. These combinations can be found in the specific department recovery plans located in Part 2 Business Units Recovery Plans in this document.

Specific to the Technology Services department recovery, it is assumed that the majority of necessary personnel required will be available and will answer the emergency call. Necessary personnel, alternates, and associated roles are outlined in this document.

Recovery Management Team Section 1

This team consists of Technology Services Core Management Team and will report directly to the Disaster/Recovery site for Technology Services at DME Operations and Engineering Building, 1685 Spencer Road, Denton, TX 76205, and have the responsibility of overseeing the recovery and restoration of Technology Services. The IT Project Manager is responsible for communicating the recovery status to the Core Teams and to the Chief Technology Officer Services in the Emergency Operations Center, and for making the necessary management decisions to support the department recovery efforts.

The overall objectives and functions of the Technology Services Recovery Management Team are to:

- Make a preliminary assessment of the damage;
- Notify core team leaders and Chief Technology Officer on current status, impact to department, and plan of action;
- Declare the disaster, if necessary;
- Initiate the plan during an emergency situation;
- Organize and operate the Technology Services Disaster/Recovery Center as the central point of control during the recovery efforts; and
- Administer and direct the problem resolution function.

Team Roles and Members **Section 1-A**

The Technology Services Recovery Management Team is organized as follows. Refer to the Technology Services Employee Call Trees (in this section) for emergency contact information and the Recovery Management Checklists (Part 4, Management Checklists) for step-by-step checklists for each member to use in the event of a disaster.

	Team Roles	**Primary**	**Alternate**
1.	Recovery Manager for Tech Services	Drew Allen	Curtis Conrad
2.	Data/Voice Services and Infrastructure	Paul Desjardins	Rich Rangel
3.	Applications Support	Cherie Reed	Sandra Allsup
4.	Desktop Services	Steve Scott	Ginger McMichael

Recovery Manager Responsibilities ***Section 1-B***

- Activates notification procedures and maintains communication with Core Response Teams and Chief Technology Officer;
- Activates and supervises overall department recovery operations and Core Response Teams;
- Makes final determination to activate Technology Services recovery plan;
- Has authority to call in all necessary resources to resolve problems in restoring critical functions to operational levels;
- Prioritizes work functions and recovery efforts;
- Supervises damage assessment of Technology Services' primary sites; and
- Organizes/supervises salvage operations.

Data/Voice Services & Infrastructure ***Section 1-C***

- Responsible for recovery of all Data and Voice connectivity services and maintains communication with field technicians, vendors, and the IT Project Manager;
- Serves as backup person to the Enterprise Infrastructure Manager;
- Responsible for recovery and prioritization of service restoration both within and among all City of Denton facilities;
- Co-ordinates on-going Business Continuity Planning responsibilities; and
- Develops and coordinates scenarios to exercise the overall Technology Services Recovery Plan and processes.

Applications Support Responsibilities ***Section 1-D***

- Coordinates Technology Services' recovery and operation of all central services applications;
- Coordinates communication and supervises procurement of necessary replacement equipment from vendors;
- Supervises the data restoration process;
- Maintains communication with the IT Project Manager & Enterprise Infrastructure Manager on status of systems availability;
- Assists the IT Project Manager on damage assessment as needed;
- Assists the Chief Technology Officer in recovery of department activities as needed; and
- Maintains and retrieves the Off-Site Recovery Box as/when necessary.

Desktop Services Responsibilities ***Section 1-E***

- Manages Desktop Services including PC software images, inventory of equipment, removal and re-deployment of devices from less to more critical departments and needs;
- Responsible for the department recovery efforts and providing resources for the technology requirements at the direction of the Senior Manager Applications & Support Services & Enterprise Infrastructure Manager;
- Reviews the plan and scenarios annually and makes changes as necessary;
- Advises the Fire Chief and Response Team of assets and alternatives available, based on the emergency situation and the EOC Manager's understanding of the overall operations and needs;
- Assists the Chief Technology Officer in the recovery of emergency service activities as needed;
- Assists the Enterprise Applications Manager & Enterprise Infrastructure Manager in the recovery of Technology Services functionality as directed; and
- Maintains Recovery Log throughout the recovery effort.

Core Services Response Teams **Section 2**

These individuals are responsible for executing the recovery processes necessary for the continuity or recovery of the Technology Services department functions, beginning with the centralized (enterprise) services. These individuals report to the appropriate Core Response Team Leader for instructions on the logistics of the recovery process. A listing of the members of the Response Teams and their emergency contact information can be found in the Technology Services Employee Call Trees (in this section).

The primary responsibilities of the members of these teams are as follows:

- Report to the DME Operations and Engineering Building, 1685 Spencer Road Denton, TX 76205, when instructed by their team leader;
- Begin salvage and recovery process as directed by the appropriate manager;
- Execute the Technology Services centralized services recovery procedures for their area of responsibilities in the order of priority identified;
- Communicate the status of the recovery to the Core Response Team Leaders as needed;
- Identify issues or problems to be escalated to the IT Project Manager & Enterprise Infrastructure Manager for resolution;
- Support efforts to return to normal operations;
- Re-establish support operations affected by the disaster; and
- Identify replacement equipment or software needed for the recovery effort and to return to normal operations.

	Team Roles	**Primary**	**Alternate**
1.	Communications/Logistics Support	Drew Allen	Miriam Klein
2.	Phone, Data, Infrastructure & Facilities Recovery	Curtis Conrad Pete Muthiani	Rich Rangel Paul Desjardins
3.	User Support	Steve Scott	Ginger McMichael
4.	Applications/GIS	Cherie Reed/Sandra Allsup	Tony Smith/ Jim Barnes

Core Services Response Team Leaders' Responsibilities ***Section 2-A***

- Coordinates re-establishment of activities with priority given to the area they are responsible;
- Works with Technology Services Recovery Management Team, as necessary, throughout the recovery process to maximize resources and resolve problems;
- Establishes and oversees alternative interim procedures until normal capabilities are restored;
- Evaluates and verifies that key files and automated processes are fully restored;
- Supervises contractors and vendors in repair of facilities;
- Assists the Chief Technology Officer in recovery of emergency functions and activities as needed; and
- Estimate damages and forming an action plan to return to normal operations.

Communications/Logistics Support Responsibilities ***Section 2-B***

- Determines accountability of personnel in a catastrophic disaster;
- Coordinates communication with city employees, city management, and vendors and updates them with efforts to return to normal operations;
- Assists Response Team Leaders with staffing issues and requirements;
- Provides assistance for those injured (i.e. ensuring medical benefits are provided, working with insurance companies, and assisting family members with their immediate needs);
- Assists in the needs of families suffering the loss of casualty victims;
- Assists in the recovery of department activities as needed;
- Works with the city's travel agency, accounting, and other departments to make sure administrative processes function smoothly during recovery;
- Ensures that meals are provided for all employees throughout the recovery process; and
    - Supervises and delegates responsibilities to members including:
    - Answering phones;
    - Making travel arrangements for recovery staff;
    - Providing food at recovery locations;
    - Keeping minutes of the status meetings;
    - Distributing information as requested; and
    - Making copies.

Phone, Data, Infrastructure and Facilities Responsibilities ***Section 2-C***

- Coordinates the phone and data systems recovery, getting contractors, pulling cable, contacting vendors, and providing facility services for the recovery of the Technology Services centralized and enterprise-wide applications and functionality;
- Works with Verizon, SBC, and other telecommunications vendors to re-establish communication services for emergency services, centralized technology services, and departmental services ;
- Assists in the relocation of the Emergency Operations Center and Technology Services as needed;
- Assists in the re-establishment of wireless connectivity capabilities; and
- Assists Recovery Management Team in recovery of department activities as needed.

User Support Responsibilities ***Section 2-D***

- Coordinates the desktop systems recovery, going into the field and getting laptops and desktops from less critical departments or ones with longer recovery times (building inspections), loading them with the appropriate software loads and deploying them to meet the critical needs of the organization;
- Works with Dell and other PC vendors as well as Best Buy and local retailers to meet desktop service needs for emergency response services, centralized technology services, and departmental services;
- Responsible for recovery of file and print services citywide, as well as the E-Mail services recovery and restoration; and
- Assists Recovery Management Team in recovery of department activities as needed.

Applications/GIS Responsibilities ***Section 2-E***

- Coordinates the system and data recovery processes and services for the recovery of the Technology Services centralized and enterprise-wide applications and functionality;
- Works with Harris, JD Edwards, and other application vendors to re-establish enterprise and departmental services; and
- Assists Recovery Management Team in recovery of department activities as needed.

Name	Division	Office Ext	Cell Phone
Allen, Drew	Administration	8067	303-589-1580
Allsup, Sandra	DME TS - Applications	7102	214-450-9945
Babcock, Kevin	Application Development	7868	940-367-4942
Barnes, Jim	Application Development	8530	940-390-4279
Belew, Mike	Application Development	8245	817-247-0105
Blair, Colson	GIS	8937	817-734-4546
Collaud, Lisa	TS Public Safety Support	7519	940-390-2077
Collier, Larry	DME TS	7539	817-944-5509
Conrad, Curtis	Administration	7787	972-998-9898
Darling, Kenn	DME TS - Applications	7313	817-771-8146
Desjardins, Paul	Infrastructure	7373	940-220-6310
Durnell, John	Infrastructure	7763	940-453-0267
Eady, Alan	DME TS	7878	214-802-8268
Ellison, Terry	Radio/Fiber Comm	7174	940-391-0657
Garabedian, Hovannes	TS Public Safety Support	7897	214-604-7921
Goodlett, Dan	DME TS	7562	469-503-1420
Griner, Thorpe	Support Services	7857	940-230-2449
Guajardo, Emilio	Radio/Fiber Comm	7164	940-735-2120
Jose, Irene	Administration	8191	214-334-2697
Klein, Miriam	Radio/Fiber Comm	7171	940-390-4308
Kraft, Melissa	Administration	7823	972-978-8599
Masters, Shelly	Support Services	7265	940-284-5510
McMichael, Ginger	Support Services	7830	940-453-0728
Miller, Brittany	Application Development	7490	817-944-7337
Miller, Debra	Support Services	8798	940-368-8351
Moericke, Zack	Regulatory Compliance	7737	817-689-5991
Morris, Lowell	Application Development	8267	214-537-3162
Munoz, Robert	Radio/Fiber Comm	7437	940-367-9520
Muthiani, Pete	Infrastructure	7536	972-837-3710
Padgett, Stephanie	Administration	8199	940-765-3472
Patel, Ashka	TS Public Safety Support	7981	908-410-7375
Rangel, Rich	Infrastructure	7453	972-836-8491
Reed, Cherie	Administration	7533	214-213-6335
Regenold, Joshua	Infrastructure	8347	940-230-5121
Roseberry, Eric	Administration	8266	972-965-6842
Scott, Steve	Support Services	7566	817-773-2399
Scott, Tony	Radio/Fiber Comm	7330	214-533-0437
Sharar, Thom	Infrastructure	8703	940-391-0115
Shook, Dusty	Support Services	7571	972-951-6727
Silva, Adam	Support Services	7248	940-783-0560
Smith, Lee Anne	Infrastructure	8797	214-908-3601
Smith, Tony	GIS	8933	972-358-0127
Smithers, Ken	Radio/Fiber Comm	7429	940-453-4691
Stewart, Brian	Application Development	7811	817-689-3753
Stockard, Jonathan	Radio/Fiber Comm	7175	940-902-1178
Tran, Doug	DME TS	8428	940-315-0723
Trantham, Aaron	Support Services	7550	903-271-5676
Warzwick, Fred	DME TS - Applications	7336	940-453-9727
Washington, Darrell	Radio/Fiber Comm	7311	940-300-3082
Werner, Coy	Radio/Fiber Comm	7459	940-230-8189
Wiltz, Cayden	Support Services	7856	337-764-4006
Young, Kyle	Regulatory Compliance	7623	214-693-8097

DISASTER DEFINITIONS CHAPTER 3

Critical Applications and Priorities Section 1

The business units and Technology Services determined the application criticality for recovery purposes through a Business Impact Analysis. The following list describes City of Denton's critical applications and the related time criticality classifications.

Responsible Team	Priority	Name of the service
Phone, Data, and Facilities Recovery	AAA	Telephones (Cisco)
Phone, Data, and Facilities Recovery	AAA	Wide Area Network Connectivity
Infrastructure	A	Email/Exchange
Infrastructure	A	System Domain and Services (AD)
Application Development	A	NorthStar (Harris) Customer Information System
Application Development	A	JD Edwards Financial and HRIS Services
Application Development	C	Paymentus
Geographic Information Systems	C	ESRI GIS Services

AAA = Recovery time within 1 hour
AA = Recovery time within 2 hours
A = Recovery time within 4 hours
B = Recovery time within 8 hours (may span 2 business days)
C = Recovery time within 24 hours (will span 2 business days)
D = Recovery time within 3 business days
E = Recovery time within 7 business days
F = Recovery time within 30 days

Service Interruptions vs. Disasters Section 2

Should a critical service from this listing fail the estimated length of recovery time necessary will determine if the outage can be classified as an interruption or if a disaster needs to be declared. As an example, should a service designated at B priority fail and it is estimated that the recovery time will result cover more than eight (8) business hours, this failure will constitute a disaster and activation of the disaster recovery plan. **Business hours are defined as: 8am until 5pm, Monday through Friday. This does not include days the city is closed for holidays.**

Should a non-critical service fail, the Enterprise Application Manager and User Support Supervisor will decide who and how to communicate the outage. The Chief Technology Officer or Deputy Technology Director or Enterprise Infrastructure Manager will be informed and apprised of these outages and given regular progress updates and off-site Recovery Box will be requested to be delivered to designated location.

Disasters may be declared by the Chief Technology Officer, or by any member of the Core Team.

Phone, Data, and Facilities Contact Information Section 3

COMMMUNICATIONS VENDORS	CONTACT/ REQUIRED INFORMATION	PHONE NUMBER
FRONTIER-Telephone Switch Support		(800) 441-1615
CISCO		(800) 533-6387
FACILITIES MANAGEMENT		(940) 349-7200
POWER - UPS DataCenter Maint.	czello@ppsups.com	(800) 371-0370
PROTECTION ONE - Security System	A18-0730 / 1163578	(800) 438-4357

Infrastructure Contact Information Section 4

INFRASTRUCTURE VENDORS	CONTACT/ REQUIRED INFORMATION	PHONE NUMBER
PRESIDIO	Traci Chrisman	(469) 549-3841
VMWARE	Support.vmware.com	(877) 486-9273
EMC	Support.emc.com	(800) 782-4362
VCE	Support.vce.com	(877) 308-0993
PALO ALTO		(866) 898-9087

User Support Team Contact Information **Section 5**

USER SUPPORT VENDORS	CONTACT	PHONE NUMBER
MICROSOFT		(800) 936-4900
DELL	(Purchase)	(800) 981-3355
DELL	(Tech Support)	(800) 822-8965
SHI		(800) 870-6079

Application Development Team Contact Information **Section 6**

APPLICATION DEVELOPMENT VENDORS	CONTACT	PHONE NUMBER
NORTH STAR (HARRIS)	Lisa Ross	(613) 226-5511
J.D. EDWARDS (ORACLE)		(800) 477-5738
ORACLE	Tech Support	(800) 223-1711
LASERFICHE (MCCI)	Mccinnovations.com	(850) 701-0737

Geographic Information Systems Team Contact Information **Section 7**

GIS VENDORS	CONTACT	PHONE NUMBER
ESRI	Tech Support	(888) 377-4575
AZTECA (CITYWORKS)		(801) 523-2751

Regulatory Compliance Team Contact Information **Section 8**

REG COMP VENDORS	CONTACT	PHONE NUMBER
DELL SECUREWORKS		
BITDEFENDER		

Contact Matrix **Section 9**

Should a critical service fail and the recovery plan be executed, the following chart outlines the departments and the software packages that are critical to their function. The Communications Logistics Manager should reference the following chart to determine who should be contacted in the event of a disaster or severe service interruption.

SOFTWARE USED BY ALL CITY DEPARTMENTS

Microsoft Exchange File Server
Microsoft Windows 7, (Local OpSys)
Microsoft Office Professional 2013 (Local Install)
Microsoft Outlook
BitDefender Antivirus
Adobe Acrobat Reader (Local Install)
GIS Web Portal

NORTH STAR (HARRIS) PUBLIC UTILITY BILLING SYSTEM ■
J.D. EDWARDS HUMAN RESOURCES ■
GEOGRAPHIC INFORMATION SYSTEM ■

DEPARTMENT				DEPARTMENT			
Accounting	■	■					
Airport				Public Affairs			
Animal control				Purchasing		■	
Budget		■		Risk Management		■	
Building Inspection	■		■	Solid Waste Administration	■		
Cable TV				Solid Waste Commercial Collection	■		■
Community Improvement			■	Solid Waste Customer Relations	■		
Economic Development			■	Solid Waste Landfill			
Electric Administration	■			Solid Waste Recycling	■		
Electric Communications				Solid Waste Residential Collection	■		■
Electric Distribution	■		■	Streets			■
Electric Engineering			■	Technology Services Administration			
Electric Marketing	■			Technology Services Applications Development			
Electric Metering Operations	■			Technology Services GIS			■
Electric Substations				Technology Services Public Safety Support			
Engineering			■	Technology Services Telecommunications			
Facility Management	■			Technology Services User Support			
Finance Administration		■		Traffic Operations			■
Fire			■	Treasury			
Fleet Vehicle Maintenance				Warehouse		■	
General Government Administration				Wastewater Administration	■		■
Human Resources		■		Wastewater Beneficial Reuse	■		
Legal Administration				Wastewater Collection	■		■
Library Administration				Wastewater Drainage	■		■
Library Emily Fowler				Wastewater Industrial Pretreatment			
Library North Branch				Wastewater Laboratory			
Library South Branch				Wastewater Water Reclamation			
Municipal Court Clerks				Wastewater Watershed Protection			■
Municipal Judge				Water Administration	■		■
Parks Administration				Water Customer Service	■		■
Parks Keep Denton Beautiful				Water Distribution	■		■
Parks Leisure Services				Water Engineering			■
Parks Maintenance			■	Water Laboratory			
Planning			■	Water Metering	■		■
Police	■		■	Water Production	■		
				Water Safety & Training			
				Water Utilities Administration	■		■

PLAN ACTIVATION CHAPTER 4

Emergency Alert Section 1

The City of Denton is committed to providing a safe environment for our employees and making and communicating decisions quickly and efficiently to protect and ensure the life and health of our employees and the assets we are responsible for in providing technology services to the organization. In the event that an emergency situation or disaster occurs at the City of Denton or a significant interruption in the delivery of a critical service to the City, the first person to become aware of the situation will contact one of the core managers in Technology Services. The core manager will contact either the Chief Technology Officer, Senior Manager Applications & Support Services, Enterprise Applications Manager, Enterprise Security Operations Manager or Enterprise Infrastructure Manager. The Chief Technology Officer, Senior Manager Applications & Support Services, Enterprise Applications Manager, Enterprise Security Operations Manager or Enterprise Infrastructure Manager will then contact the Technology Recovery Management Team Leader(s) to alert them that a disaster may be declared and decide if the situation poses an immediate danger to the life or health of the employees. Should it be determined that no threat to the employees exist, The Chief Technology Officer, Senior Manager Applications & Support Services, Enterprise Applications Manager, Enterprise Security Operations Manager or Enterprise Infrastructure Manager and other necessary management will begin the initial damage assessment.

Notification of Technology Services Personnel Section 2

In the event of a general disaster, this plan would be activated under the City of Denton Emergency Management Plan and would be administered by the Fire Chief. Refer to Appendix 02, “Alternate Site / Emergency Operations Center (EOC) Information”. For all other classes of disasters resulting in a substantial loss of services provided by Technology Services to the City of Denton the following notification procedures apply.

Once a disaster has been declared and the decision has been made to activate all or a portion of the Technology Services Disaster Recovery Plan, The Chief Technology Officer, Senior Manager Applications & Support Services, Enterprise Applications Manager, Enterprise Security Operations Manager or Enterprise Infrastructure Manager will notify the Technology Services Recovery Teams (see Part 3, Chapter 2 – Team Organization). Technology Services Recovery Management Team members will be asked to classify the impact of the disaster by identifying the key components affected, assigning the disaster recovery team(s) to affect recovery, and to contact all members of the specific recovery teams necessary.

Cell phones will be used as the primary method for contacting team members.

Notification of External Personnel Section 3

Once a disaster has been declared, only the Chief Technology Officer, Senior Manager Applications & Support Services, Enterprise Applications Manager, Enterprise Security Operations Manager, Enterprise Infrastructure Manager or Response Team Leaders will contact external personnel to direct recovery efforts and inform and update employees of the City of Denton on progress towards return to normal operations. Any communications regarding recovery efforts should be directed to one of the Response Team Leaders. This will ensure consistent and accurate communication on status of the recovery to the appropriate external personnel.

When a disaster is declared, the Deputy City Manager needs to be contacted and informed of the situation. Next, the Deputy City Manager and Department Directors whose departments are affected by the outage need to be contacted and informed. If applicable, the employees of the department(s) affected need to be contacted. After initial notification, the first update to these groups will be issued after four hours, and will include current status and time estimation until the next milestone towards the resumption of normal operations. No after hour updates will be issued, however update message will be issued at 08.00, 12.00, and 16.00 on the next business day and every business day until normal business processes have been resumed.

Updates may take the form of e-mail communication, voicemails, phone calls, message pages, or network broadcasts to the workstations. Updates should be concise, include a contact number for more information, and include all the information available at the time they are issued. A record of these communications will be recorded by the Communications/Logistics Support leader during the entire outage. The User Support Team will often be charged with the responsibility of making these communications, but any Technology Services employee may also be asked to help as needed in this vital function.

Problem Management **Section 4**

Any problem encountered that could delay the recovery of any critical function or uncertainty about a communications issue, and cannot be resolved by the Core Services Response Team, must be brought to the attention of the Recovery Management Team immediately. A special meeting of the Recovery Management Team will be held to determine a course of action to resolve the issue. It is essential to the success of a recovery effort that problems be assessed and when necessary, escalated quickly to avoid unnecessary difficulties or additional downtime. The Chief Technology Officer, Senior Manager Applications & Support Services, Enterprise Application Manager, Enterprise Security Operations Manager or Enterprise Infrastructure Manager will be responsible for maintaining a Recovery Log that will include recovery management meeting notes and issues tracking. Refer to Appendix 06, “Recovery Log”.

Technology Services Off-Site Recovery Box **Section 5**

A box containing pertinent documents, procedures, diagrams, contact information, backup tapes and other materials necessary to facilitate the recovery and restorative process for Technology Services is maintained at Fire Station 7 in the off-site storage facility.

The Off-Site Recovery Box is updated annually by the Deputy Technology Director or Enterprise Applications Manager.

Technology Services Functions, Applications, and Risk Classifications **Section 6**

Services and applications will be recovered based on their prioritization classification that has been determined by Technology Services in support of the Business Impact Analysis created and reviewed by the departments and executive management of the City. Refer to Appendix 11, “Functions, Applications, and Priorities”.

Technology Services Telephone Re-Routing Requirements **Section 7**

Technology Services main and desk phone numbers will be re-routed to cellular phones as soon as cellular service is available. In addition, all department main phone numbers will be re-routed to their designated recovery sites, as outlined in the overviews of the department recovery plans in Part 2 of this document, and is the responsibility of the Phone, Data, and Facilities Recovery Team.

Technology Services Mail Re-Routing Requirements **Section 8**

In the event of a disaster in which Technology Services is relocated to the alternate site, successful recovery and re-routing of mail services will be critical to the recovery of operations. Mail for Technology Services should be re-routed to DME Operations and Engineering Building, 1685 Spencer Road, Denton, TX 76205.

Technology Services Employee and Equipment Requirements **Section 9**

Technology Services equipment needs will be addressed immediately after the emergency responder equipment needs are addressed. Department equipment and employee requirements are detailed in each department section of the Business Continuity Plan and will be fulfilled by the User Support Team as equipment becomes available for re-deployment or replacement. A comprehensive summary tallying the number of employees, equipment needs, and space requirements for all City of Denton departments is included in Appendix 10, “Critical Resources Summary”.

Technology Services Calling Tree **Section 10**

This call tree is to be used for contacting other Technology Services employees at home or work to notify them of the occurrence of a disaster.

Name	Division	Office Ext	Cell Phone
Allen, Drew	Administration	8067	303-589-1580
Allsup, Sandra	DME TS - Applications	7102	214-450-9945
Babcock, Kevin	Application Development	7868	940-367-4942
Barnes, Jim	Application Development	8530	940-390-4279
Belew, Mike	Application Development	8245	817-247-0105
Blair, Colson	GIS	8937	817-734-4546
Collaud, Lisa	TS Public Safety Support	7519	940-390-2077
Collier, Larry	DME TS	7539	817-944-5509
Conrad, Curtis	Administration	7787	972-998-9898
Darling, Kenn	DME TS - Applications	7313	817-771-8146
Desjardins, Paul	Infrastructure	7373	940-220-6310
Durnell, John	Infrastructure	7763	940-453-0267
Eady, Alan	DME TS	7878	214-802-8268
Ellison, Terry	Radio/Fiber Comm	7174	940-391-0657
Garabedian, Hovannes	TS Public Safety Support	7897	214-604-7921
Goodlett, Dan	DME TS	7562	469-503-1420
Griner, Thorpe	Support Services	7857	940-230-2449
Guajardo, Emilio	Radio/Fiber Comm	7164	940-735-2120
Jose, Irene	Administration	8191	214-334-2697
Klein, Miriam	Radio/Fiber Comm	7171	940-390-4308
Kraft, Melissa	Administration	7823	972-978-8599
Masters, Shelly	Support Services	7265	940-284-5510
McMichael, Ginger	Support Services	7830	940-453-0728
Miller, Brittany	Application Development	7490	817-944-7337
Miller, Debra	Support Services	8798	940-368-8351
Moericke, Zack	Regulatory Compliance	7737	817-689-5991
Morris, Lowell	Application Development	8267	214-537-3162
Munoz, Robert	Radio/Fiber Comm	7437	940-367-9520
Muthiani, Pete	Infrastructure	7536	972-837-3710
Padgett, Stephanie	Administration	8199	940-765-3472
Patel, Ashka	TS Public Safety Support	7981	908-410-7375
Rangel, Rich	Infrastructure	7453	972-836-8491
Reed, Cherie	Administration	7533	214-213-6335
Regenold, Joshua	Infrastructure	8347	940-230-5121
Roseberry, Eric	Administration	8266	972-965-6842
Scott, Steve	Support Services	7566	817-773-2399
Scott, Tony	Radio/Fiber Comm	7330	214-533-0437
Sharar, Thom	Infrastructure	8703	940-391-0115
Shook, Dusty	Support Services	7571	972-951-6727
Silva, Adam	Support Services	7248	940-783-0560
Smith, Lee Anne	Infrastructure	8797	214-908-3601
Smith, Tony	GIS	8933	972-358-0127
Smithers, Ken	Radio/Fiber Comm	7429	940-453-4691
Stewart, Brian	Application Development	7811	817-689-3753
Stockard, Jonathan	Radio/Fiber Comm	7175	940-902-1178
Tran, Doug	DME TS	8428	940-315-0723
Trantham, Aaron	Support Services	7550	903-271-5676
Warzwick, Fred	DME TS - Applications	7336	940-453-9727
Washington, Darrell	Radio/Fiber Comm	7311	940-300-3082
Werner, Coy	Radio/Fiber Comm	7459	940-230-8189
Wiltz, Cayden	Support Services	7856	337-764-4006
Young, Kyle	Regulatory Compliance	7623	214-693-8097

EMERGENCY RESPONSE PROCEDURES — CHAPTER 5

Life, Health, and Safety Evaluation and Procedures — Section 1

The purpose of this procedure is to establish a safe and orderly evacuation procedure for the Technology Services department in City Hall East, to establish an assembly location for personnel and an alternate location, damage mitigation and assessment procedures, and detail the transition from Emergency Response to Disaster Recovery procedures.

Technology Services Employee Responsibility

Any employee who suspects or has knowledge of impending danger or threat of danger due to smoke or fire in City Hall East should activate the fire alarm at the nearest fire alarm pull station. These procedures apply, regardless of whether the event occurs during regular working hours or after hours.

Any employee who suspects or has knowledge of impending danger or threat of danger due to bomb threats, threats of civil disorder, terrorist threats, activist threats, workplace violence, or hazardous materials incident should notify anyone on the Core Manager team, The Chief Technology Officer, IT Project Manager, Enterprise Application Manager, Enterprise Security Operations Manager or Enterprise Infrastructure Manager if the event occurs during regular working hours. Should the event occur during non-working hours, the employee should contact Fire and Police emergency dispatch using the emergency number. From city phones and non-city phones the number is 9-1-1.

Any employee who suspects or has knowledge of impending danger or threat of danger due to impending Acts of God should notify a Core Team manager, The Chief Technology Officer, IT Project Manager, Enterprise Application Manager, Enterprise Security Operations Manager or Enterprise Infrastructure if the event occurs during regular working hours. After notification or if the event occurs during non-working hours, the employee should take shelter under a desk in one of the interior offices in Technology Services until the danger has passed.

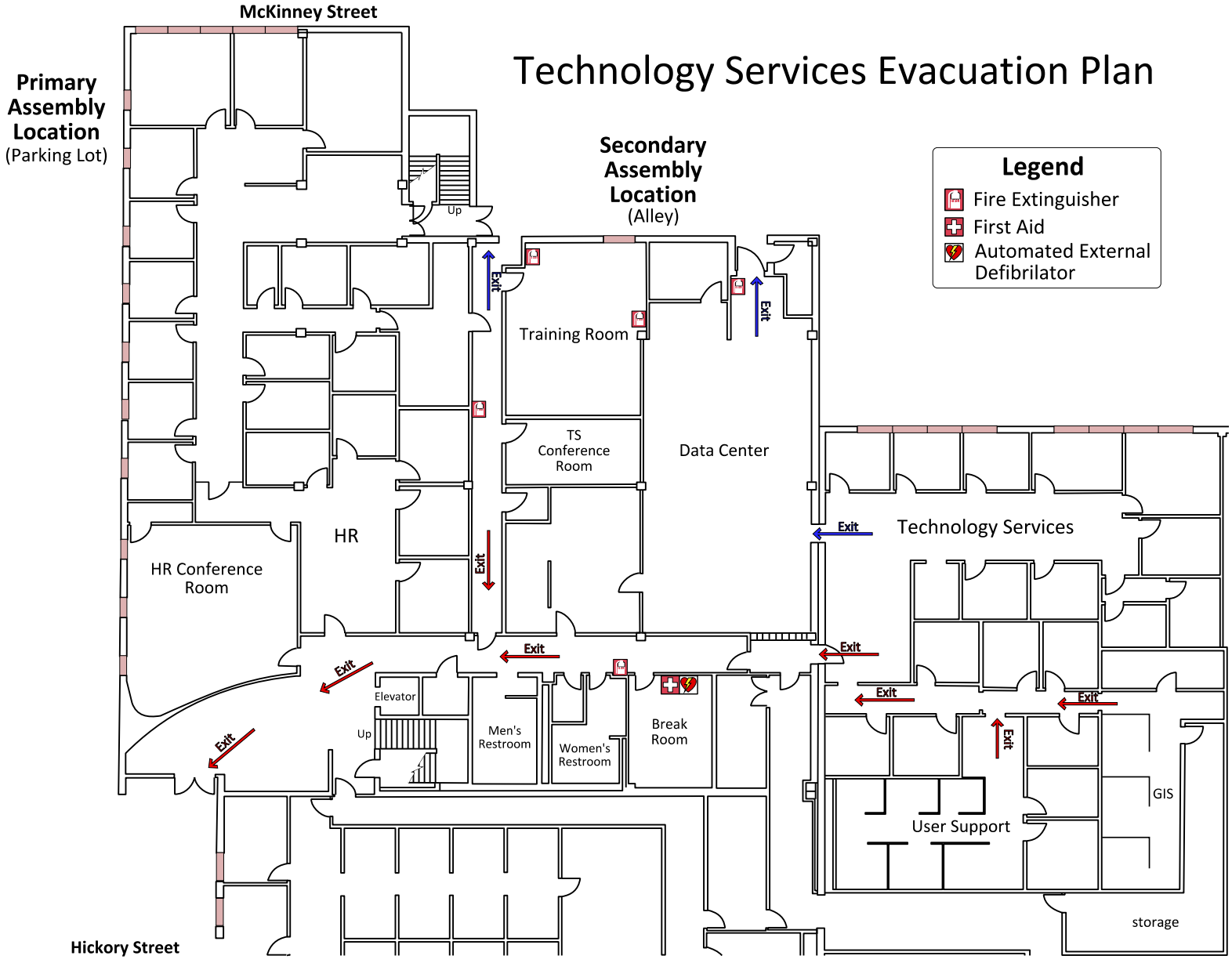
Evacuation

From Technology Services, the preferred evacuation route is through the main entrance and out the public access doors onto Railroad Avenue. Should this route be blocked, the secondary route is through the data center doors and out the back door into the alleyway behind City Hall East, to the parking lot on Railroad Avenue. In the event of a need for evacuation, employees are responsible for assisting visitors to follow the designated routes. Stairs should be used rather than the elevator if evacuating from the second floor.

Employees shall immediately evacuate the facility when an audible alarm sounds or when instructed by a Core Manager, fire personnel, or police personnel to vacate the premises. Employees should not stop for personal or other items when evacuating the facility. Once all personnel have cleared an office, the door to the office should be closed, but not locked. Once all personnel have cleared the Technology Services area, the entry door to the common hallway should be closed but not locked.

The Chief Technology Officer, IT Project Manager, Enterprise Application Manager, Enterprise Security Operations Manager or Enterprise Infrastructure Manager shall check the Technology Services area to ensure complete evacuation and that the doors are closed but not locked. In the event

a door controlled by a card reader fails to open, pulling a fire alarm will cause the door to clear and it will be able to open the door, unless the door is blocked. Pulling the fire alarm will also open the sliding door to the data center.



Assembly Locations

Unless instructed as unsafe by Police or Fire personnel, the Technology Services group will assemble in the parking lot on Railroad Avenue across the street from City Hall East. The Chief Technology Officer, IT Project Manager, Enterprise Application Manager, Enterprise Security Operations Manager or Enterprise Infrastructure Manager will account for technology personnel. Attempts to contact unaccounted personnel by cell phone will be made for five (5) minutes after evacuation. Fire or Police personnel will be notified and given the last known location of any person unaccounted upon failure to respond to pager or cellular contact. Technology Services personnel will remain in the assembly location until receiving a clearance to return to City Hall East or given instruction from the Chief Technology Officer, IT Project Manager, Enterprise Application Manager, Enterprise Security Operations Manager or Enterprise Infrastructure Manager.

Should the parking lot across Railroad Avenue be deemed unsafe, the secondary assembly location will be down the alley behind City Hall East and to the parking lot used by the Police Department. Should neither of those locations be available, assembly will be at the DME Operations and Engineering Building, 1685 Spencer Road, Denton, TX 76205. Please see evacuation maps/assembly locations on the previous page.

Clearance to Return to Facility

Following an evacuation, employees may not re-enter City Hall East until the Fire or Police department have given clearance.

Damage Mitigation **Section 2**

Damage mitigation is the responsibility of the Core Services Response Team. Depending upon the situation and system, mitigation may include disconnection of the service from the Internet, disconnection of the service from some internal users, or the complete discontinuation of the service from all users until damage assessment is completed and the decision to declare a disaster is made.

Communication of damage should first be made to the Recovery Management Team managers and as the situation clarifies, to the end users affected as per the user impact matrix found in Part 3, Chapter 3, Section 7. Please reference Part 3, Chapter 3 for communication guidelines.

Damage Assessment **Section 3**

Facility damage assessment will be performed by each of the Recovery Management Team managers as outlined in Part 3, Chapter 2. Recovery Team Managers will use the Damage Assessment Form found in Appendix 06 of the Business Continuity Plan.

System damage assessment will be performed by the Core Services Response Teams (see Chapter 2, Section 2) and will report their findings to the Chief Technology Officer, IT Project Manager, Enterprise Application Manager, Enterprise Security Operations Manager or Enterprise Infrastructure Manager as soon as they are completed.

System damage assessments will identify the service and associated equipment failures and

Failure Severity	Description
Minimal Failure	Non-critical system failure (system does not appear in Part 3 Chapter 3 Critical Services listing) or complete system recovery is expected within the recovery time objective.
Moderate Failure	Critical system failure, but partial system recovery expected within the recovery time objective. Recovery time objectives will be evaluated on a department-by-department basis. Any recovery time objective that is not met will trigger a disaster declaration.
Severe Failure	Critical system failure and system recovery not expected within the recovery time objective.

categorize these failures by the following matrix:

Transition from Emergency Response to Disaster Recovery Procedures **Section 4**

An event is considered to be contained when:

- Damage to the affected system has stopped;
- Other systems are not at risk of damage due to the same cause; and
- The cause of the damage has been determined or is obvious.

As an example, should a virus attack a system, damage may be contained when the system being damaged has been shut down, but other similar systems will need to be examined to ensure that they have not been infected before recovery of the affected system can begin. Until all three requirements are met, the team is in emergency response and containment mode.

WIDE AREA NETWORK/COMMUNICATIONS Section 1

Notification Procedures:

1. Fiber connectivity issues between City facilities must be reported to DME dispatch via 349-8400 and request a response from Communications On-Call staff.
2. Network or Phone issues must be reported to 349-8300 so that they can be routed to the appropriate response group.
3. Cisco hardware issues must be reported to TAC via 1-800-553-2447. Please provide serial number.
4. Palo Alto Networks software and hardware issues must be reported to TAC via (866) 898-9087. Please provide the serial number.

Cisco Configurations:

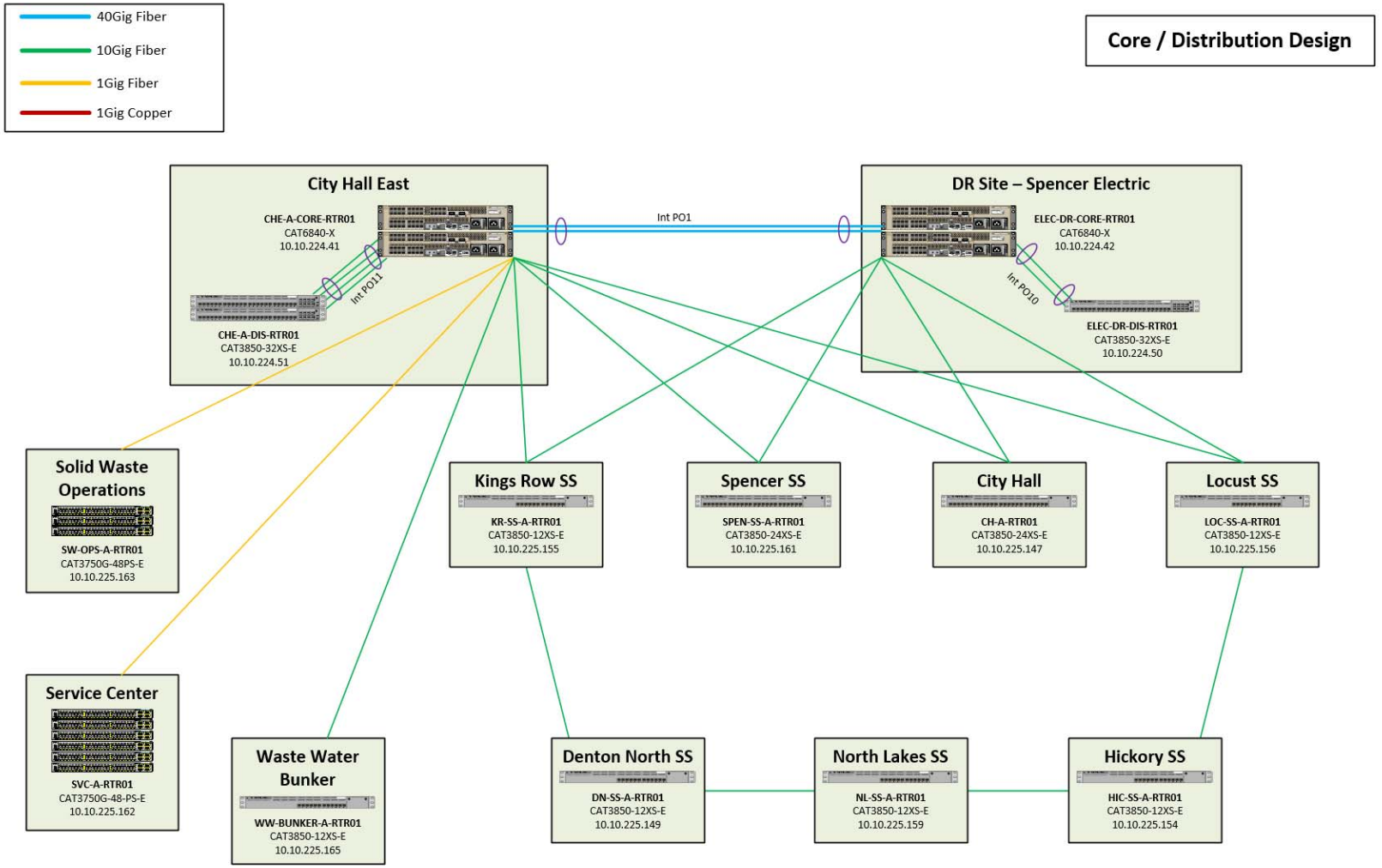
1. Copies of switch configurations are maintained on Network Server SOLARWINDS01 and SOLARWINDSSQL01.
2. Call Manager, Unity Voicemail, and Contact Center are maintained on Network Server TITANFTP01.

Palo Alto Networks Configurations:

1. Copies of firewall configurations are maintained on Network Server PANORAMA01 and on the local firewall.

Attached Documents:

1. Visio drawing “TS – Campus Design v2.0.jpg” Core / Distribution tab (WAN connections).



ARCGIS Server Manager Emergency Operations Documentation **Section 2**

This document is to be used in case the ARCGIS Web server fails. First course of action is to remote desktop over to the server itself. In all probability, the server has somehow been shutdown and needs to be restarted. Check to see if server is on. If not, restart the server. The server names are CODVAPPR and CODVAPPV.

City of Denton ARCGIS Server Manager the Microsoft .NET Framework - 8/9/2017

ARCGIS Server Manager URL: http://gisweb01:6080/arcgis/admin/login

\

1. Server: GISWEB01
2. Remote Desktop Connection to server (GISWEB01, IP# 10.5.4.126)
3. Log in to the MS Windows Server 2012 R2 Standard 64-bit as AD/user with DBA privileges.
4. Restore Drives C: & E: to complete ARCGIS Server Manager or decide what needs to be restored.
5. Go to Start/All Programs/Administrative Tools Services File to review services.
6. Services ARCGIS Server Service Enables the hosting of GIS Services. Stop or Restart the service.
7. Internet Information Services (IIS) Manager started. Enables the server to administer the IIS meta base. The IIS meta base stores configuration for the SMTP and FTP services.
8. ARCGIS Server Internal web portal information for City staff only City Network.

City of Denton ARCGIS Server Manager the Microsoft .NET Framework - 8/9/2017

ARCGIS Server Manager URL: http://gisweb01:6080/arcgis/admin/login

1. Server: GISWEB02
2. Remote Desktop Connection to server (GISWEB02, IP# 10.5.6.28)
3. Log in to the MS Windows Server 2012 R2 Standard 64-bit as AD/user with DBA privileges.
4. Restore Drives C: & E: to complete ARCGIS Server Manager or decide what needs to be restored.
5. Go to Start/All Programs/Administrative Tools Services File to review services.
6. Services ARCGIS Server Services Enables the hosting of GIS Services. Stop or Restart the service.
7. Internet Information Services (IIS) Manager started. Enables the server to administer the IIS meta base. The IIS meta base stores configuration for the SMTP and FTP services.
8. ARCGIS Server External web portal information for Citizens/Public and off City Internal Network.

City of Denton ARCGIS Image Server Information - 8/13/2019

GIS Historical MRSID and TIFFS Aerials years on File Share CODVAPPS and ISILONA includes: 2001, 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017 data. The 2019 aerials are expected to be delivered in September 2019.Mr. Sid files and folders are also located on

CODVAPPS Server. DCAD GIS Oblique Folder on Drive E includes GDB's data and MXD's for Police GEOLYNX Data.

1. Server: CODVAPPS
2. Remote Desktop Connection to server (codvapps, IP# 10.5.4.69)
3. Log in to the Windows Server 2008 64-bit as AD/user with DBA privilege
4. Raw Image location: E:\Images shared as \\ CODVAPPS\Images
   Image Service Definitions image location: E:\ServiceDefs shared as \\ CODVAPPS\ServiceDefs
   For instructions on creating and editing image service please see:

http://resources.arcgis.com/en/help/main/10.1/index.html#/Creating_a_mosaic_dataset

   User name: ArcGISImageServer, siteadmin, arcgis
   Password:
   Used Space: 709 GB
5. Restore Drives C: & E: to complete ARCGIS Image Server Manager or decide what needs to be restored.
6. Go to Start/All Programs/Administrative Tools Services File and review services.
7. Services file may require ESRI Image Server to be stopped or restarted.
8. Services file may require Image Service Provider and Image Reporter to be stopped or restarted.
9. File Share Server: ISILONA IP# 10.5.6.215)

Logging in to ArcGIS Server

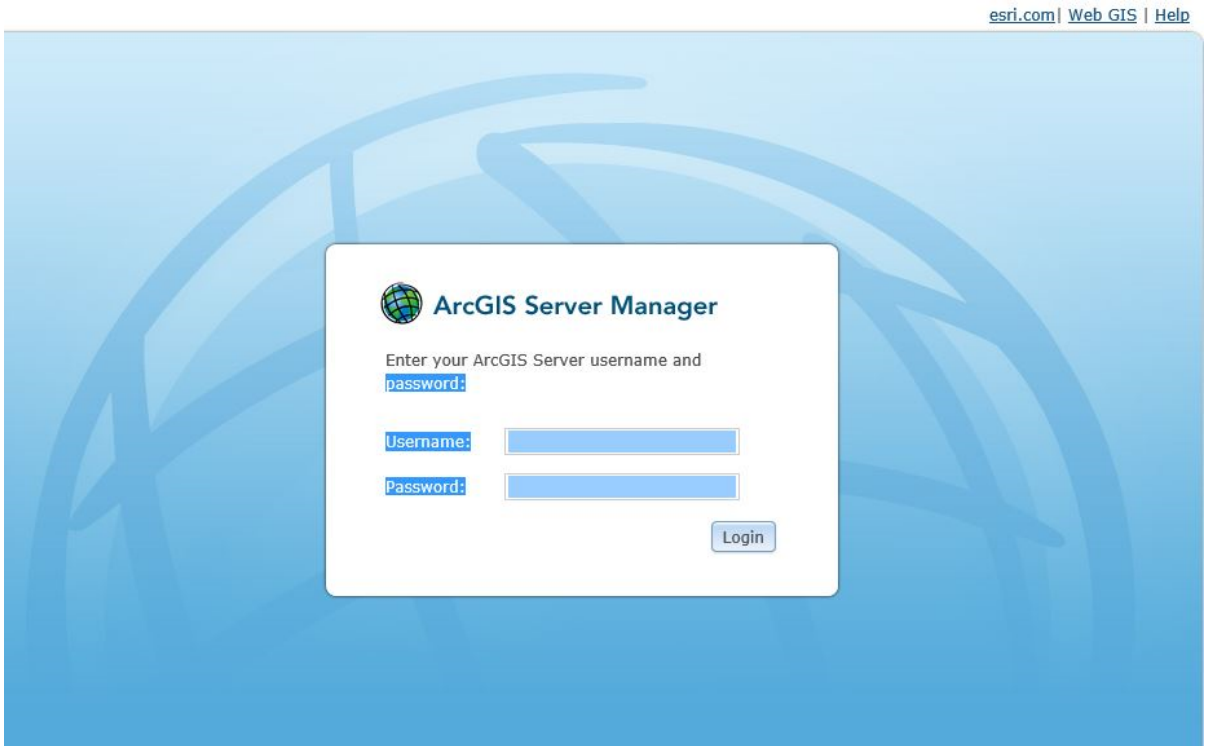
You can open Manager by browsing to the **Start** menu shortcut (**Start** > **All Programs** > **ArcGIS** > **ArcGIS Server for the Microsoft .NET Framework** > **ArcGIS Server Manager**). Alternatively, you can just enter the Manager URL in a Web browser. The URL for Manager is http://<Web server name>/ArcGIS/Manager/login.aspx.

Old Internal - ARCGIS Server Manager URL: http://codvappr:6080/arcgis/manager/login.html

Old External - ARCGIS Server Manager URL: http://codvappv:6080/arcgis/manager/login.html

Current Internal - ARCGIS Server Manager URL: https://gisweb01:6443/arcgis/manager

Current External - ARCGIS Server Manager URL: https://gisweb02:6443/arcgis/manager



If no administrator is available to log in as administrator with admin privileges (i.e Tony Smith, Kevin Babcock, Brian Stewart, Colson Blai, Eric Roseberry or Paul Desjardins), then you can log in as AD\User with your regular AD\Password.

When you open Manager, you will be prompted to log in. You must use an account that is:

- A member of the **agsadmin** group on the server object manager (SOM) machine.
- A member of the **agsusers** group on any machines to which you will make an ArcGIS Server local connection.
- A member of the **Administrators** group on the Web server machine (only required if you will be using Manager to create Web applications).

You will notice that the name of the ArcGIS Server machine cannot be changed in the login screen. This is because Manager is directly associated with one instance of ArcGIS Server. When you run the Web Services Post Install, you specify the instance name and the GIS server associated with that instance. You can only use Manager to log in to that one GIS server. Specifically, the GIS server is the machine running the SOM component of ArcGIS Server

Securing your login credentials

When you log in to Manager with the default shortcut, the name and password are sent to the server in clear text. For working with Manager outside your local machine, it's recommended that you run Manager using Secure Sockets Layer (SSL) encryption of all communication between Manager and the server.

Connecting to ArcGIS Server in ArcCatalog - Admin connections

When you connect as an administrator, you can use and edit the properties of all the services running on the server. You can also add, remove, start, stop, and pause services. Consequently, you must be running ArcCatalog as a member of the server's **agsadmin** group to make an administrative connection. Using ArcCatalog, you can only make an administrative connection through a local area network. If you want to administer the server through the Internet, use ArcGIS Server Manager.

User connections

When you connect as a user, you can view and use the services on the server, but you cannot edit their properties or add, remove, start, stop, or pause services. When making a user connection, you can choose to connect to a local server running on the local area network (LAN) or a remote server over the Internet. You must be running ArcCatalog as a member of the server's **agsusers** group to make a user connection over the LAN.

Making an admin connection to ArcGIS Server in ArcCatalog

1. Double-click the **GIS Servers** node in the Catalog tree.
2. Double-click **Add ArcGIS Server**.
3. Choose **Manage GIS Services** and click **Next**.
4. For **Server URL**, type the URL of the ArcGIS Server instance you want to connect to. This URL will be formatted as follows: http://<server name>/<instance name>/services (for example: http://myServer/arcgis/services).
5. For **Host Name**, type the name of the server you want to connect to. While your GIS server can be configured across several machines, the server name you should specify is the one that's running the server object manager (SOM).
6. Click **Finish**. The server appears in the Catalog tree.

Making a user connection to ArcGIS Server in ArcCatalog

1. Double-click the **GIS Servers** node in the Catalog tree.
2. Double-click **Add ArcGIS Server**.
3. Choose **Use GIS Services** and click **Next**.
4. Choose the connection type and the server you want to connect to.
   - If you are connecting to a server on the LAN, choose **Local** and type the name of the server you want to connect to. While your GIS server can be configured across several machines, the server machine you should specify is the one that's running the server object manager (SOM).

- If you are connecting to a server through the Internet, choose **Internet** and type the URL of the server or folder you want to connect to. The URL will be formatted as follows: http://<server name>/<instance name>/services (for example: http://myServer/arcgis/services).
  You also need to type a name and password if the server administrator has enabled security

Adding a server object container

1. Click **GIS Server** and click **Host Machines**.
2. Click **Add Host Machine**.
3. Type the **Machine Name**. You must type the exact name of the machine. Do not type localhost.
4. Optionally, set a **Capacity** value. The default is unlimited capacity.
5. Optionally, add a **Description** for the machine.
6. Click **Add**

Adding a server object container in ArcCatalog

1. Find the **GIS Servers** node in the Catalog tree and, if necessary, double-click your server to make a connection.
2. Once you've connected, right-click the name of your GIS server and click **Server Properties**.
3. Click the **Hosts** tab and click **Add**.
4. Type the **Machine Name** or click the browse button to locate it on the network. You must type the exact name of the machine. Do not type localhost.
5. Optionally, set a **Capacity** value. The default is unlimited capacity.
6. Optionally, add a **Description** for the machine.
7. Click **OK**.
8. Follow the same steps to add any other container machines you want to connect to the GIS server.

Specifying log file location

ArcGIS Server records system messages in log files. When you suspect something isn't working right, you can examine the log files to see exactly what is happening with your GIS server.

You can specify where the server writes its log files or simply accept the default location in the ArcGIS Server installation directory, which is <ArcGIS Server installation directory>\Server\user\log. This path is used to store the logs on each SOM and SOC machine.

You can alternatively write all logs to a shared directory, referenced using a UNC path (for example, \\myServer\log). You'll need to make sure the SOM and SOC accounts have **Read** and **Write** permissions to the log directory.

Specifying log file location in Manager

1. Click **GIS Server** in Manager and click **Log Files**.
2. Click **Server Log Properties**.
3. Type a location to set the path for the log files.
4. Set the maximum file size for an individual log file. When a log file reaches this size, the server will create a new one.
5. Set the **Log level**.
6. Choose whether to set a limit on the number of log file pairs (consisting of the companion .xml and .dat files) that can be stored in the log directory. When the limit is reached, the oldest log file pair will be deleted. Setting a limit can prevent the log directory from growing bigger than expected.
7. Click **OK** to save your settings.

Specifying log file location in ArcCatalog

1. In the Catalog tree, right-click the name of the GIS server for which you want to view or modify the log file location.
2. Click the **General** tab.
3. Type a **Log file path** or click the browse button to set the location for the log files.
4. Set the maximum **Log file size**. When a log file reaches this size, the server will create a new one.
5. Set the **Log level**.
6. Choose whether to set a limit on the number of log file pairs (consisting of the companion .xml and .dat files) that can be stored in the log directory. When the limit is reached, the oldest log file pair will be deleted. Setting a limit can prevent the log directory from growing bigger than expected.
7. Click **OK** to save your settings.

Setting capacity of server object container in Manager

You can configure how many running service instances each of your server object container (SOC) machines will support by setting each SOC's capacity property. If one of your SOC machines is considerably more powerful than the others, you might want to set a high capacity value on that machine and a lower value on the other machines.

1. Click the **GIS Server** tab in Manager and click **Host Machines**.
2. Click the **Edit** icon next to the machine whose capacity you want to set.
3. Choose **Enter custom limit** and type an integer representing your desired capacity in the input box.
4. Click **OK**.

Setting capacity of server object container in ArcCatalog

1. Connect to the GIS server in ArcCatalog.
2. Right-click the name of the server and click **Server Properties**.
3. Click the **Hosts** tab and choose the machine whose capacity you want to change, then click **Edit**.
4. Choose **Enter custom limit** and type an integer representing your desired capacity in the input box.
5. Click **OK** and close the ***Server Properties*** dialog box.

Creating Server directory

A server directory represents a physical directory on the network that is specially designated for ArcGIS Server to store and write certain kinds of information. There are five types of server directories: cache, index, jobs, output, and input.

Creating a server directory in Manager

1. Click the **GIS Server** tab and click **Server Directories**.
2. Click **Add Directory**.
3. Type the path to the directory in the **Directory** text box. If you've distributed the components of ArcGIS Server over more than one machine, use a UNC path (Example: \\myServer\directory1).
4. Use the **Type** drop-down list to specify the type of directory you are creating.
5. Optionally, set the **Virtual Directory**, for example, http://server_name/directory. This virtual directory should point to the same disk location as the server directory. You must create the virtual directory in your Web server and link it to the physical directory on

disk. The virtual directory allows Web applications to access files created by the GIS server using a URL.

6. Set the cleaning mode and maximum file age. You can have the server delete files at regular intervals based either on the age of the file or when the file was last accessed by a client.
7. Click **OK** to close the dialog box and apply the changes.

Creating server directory in ArcCatalog

1. Create an administrative connection to the server or double-click the server in the Catalog tree.
2. Right-click the server in the Catalog tree and click **Server Properties**.
3. Click the **Directories** tab.
4. From the **Directory Type** drop-down list, choose the type of server directory you would like to create and click **Add**.
5. Type the path to the directory. If you've distributed the components of ArcGIS Server over more than one machine, use a UNC path. Example: \\myServer\directory1.
6. Optionally, set the **Virtual Directory**, for example, http://server_name/output. This virtual directory should point to the same disk location as the server directory. You must create the virtual directory in your Web server and link it to the physical directory on disk. The virtual directory allows Web applications to access files created by the GIS server using a URL address.
7. Set the cleaning mode and maximum file age. You can have the server delete files at regular intervals based either on the age of the file or when the file was last accessed by a client.
8. Click **OK** to apply the changes and click **OK** again to close the ***Server Properties*** page.

Securing your system and GIS server

The SOM account runs the ArcGIS Server Object Manager Windows service. This process manages the container processes on the container machines as well as the GIS server's configuration information and log files. Consequently, the SOM account has privileges to write to the locations where the server configuration information and log files are stored (<ArcGIS Server install location>\server folder). It also has privileges to start container processes on the container machines.

The SOC account container processes actually host the services and do the work. Container processes are started by the server object manager but run as the SOC account. Therefore, the SOC account must have read access to any GIS resources (maps, locators, data) that preconfigured and application-specific services require to do their work. In addition, the SOC account must have write access to the server directories of the GIS server so that services running in container processes can

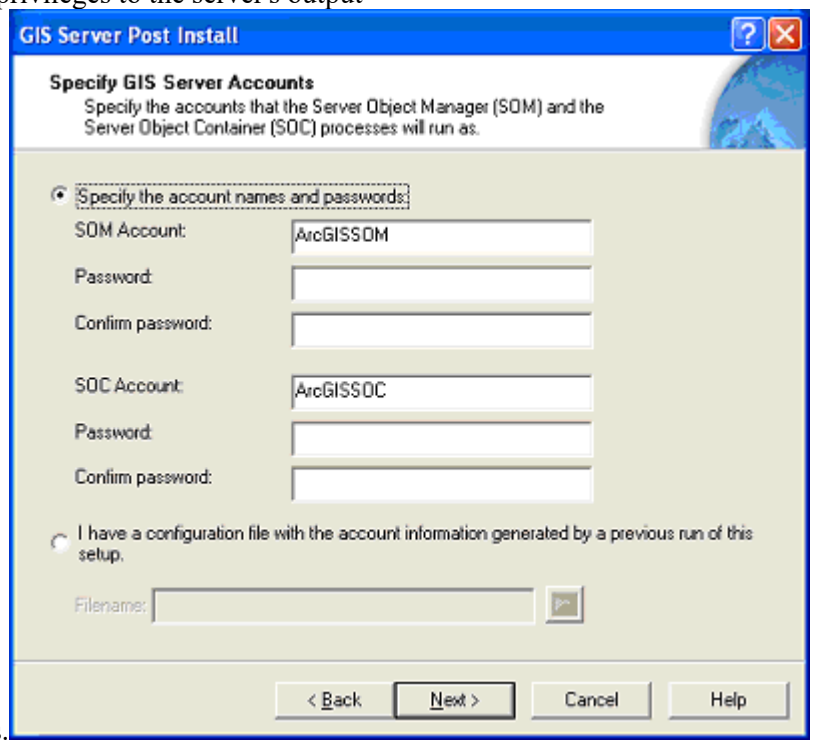
write their output. These aspects of the SOC account are important for administering your site, especially when considering privileges on shared network drives, and so on.

One important aspect of the SOC account is that, since the container processes run as that account, a user who connects to the GIS server can do anything that the SOC account can do. Because developers are free to create their own objects on the server, they have access to a wide range of functionality, including the ability to read data that the SOC account has read privileges on. More important, developers can edit, delete, and otherwise affect files that the SOC account has write privileges to.

It can be dangerous to use a domain account with many privileges as the SOC account for your GIS server. The SOC account should only have enough privileges to access necessary data and perform the task of running services. The ArcGIS Server installation can create SOC accounts with the following minimum privileges on each container machine:

- Ability to start and activate container processes
- Write access to the system temp directory

It is up to the GIS server administrator to grant this account access to any necessary data and write privileges to the server's output directories.



The GIS Server Post Install allows you to specify the SOM and SOC accounts.

The ArcGIS Web Services account is used to process Web service requests on the GIS server. This account is used internally by the Web server to communicate with the GIS server when a user makes an Internet connection.

Like the SOM and SOC accounts, you can either specify an existing account or have the postinstallation create the account for you.

You will be asked to enter the ArcGIS Web Services account when you run the Web Services Post Install on the Web server machine and when you run the GIS Server Post Install on the SOM. You should enter the same account information on the SOM that you do on the Web server. The postinstallation will add the account to the agsadmin group on the SOM.

You can use either a local or domain account for the ArcGIS Web Services account. Using a domain account for the ArcGIS Web Services account does not pose the same security risk that it does for SOM and SOC accounts, as long as you do not give the domain account any privileges other than inclusion in the agsadmin group.

Securing local connections

Local connections to a GIS server—and the services running on it—are managed by the operating system of the server object manager (SOM) machine. In much the same way the operating system allows you to create and delete files on your own computer yet prevents you from doing so on your colleague's computer, the operating system on the SOM grants some users access to the services running on the server machines while denying access to others. When you log in to your computer, the user name and password you specify identify you as a valid user on your network. Based on your operating system account, you are allowed to perform a certain set of actions—one of which might be to access a GIS server.

Before you can begin to use your GIS server, you need to establish who can access it. Once you've done that, you'll be able to connect to your GIS server and add services to it.

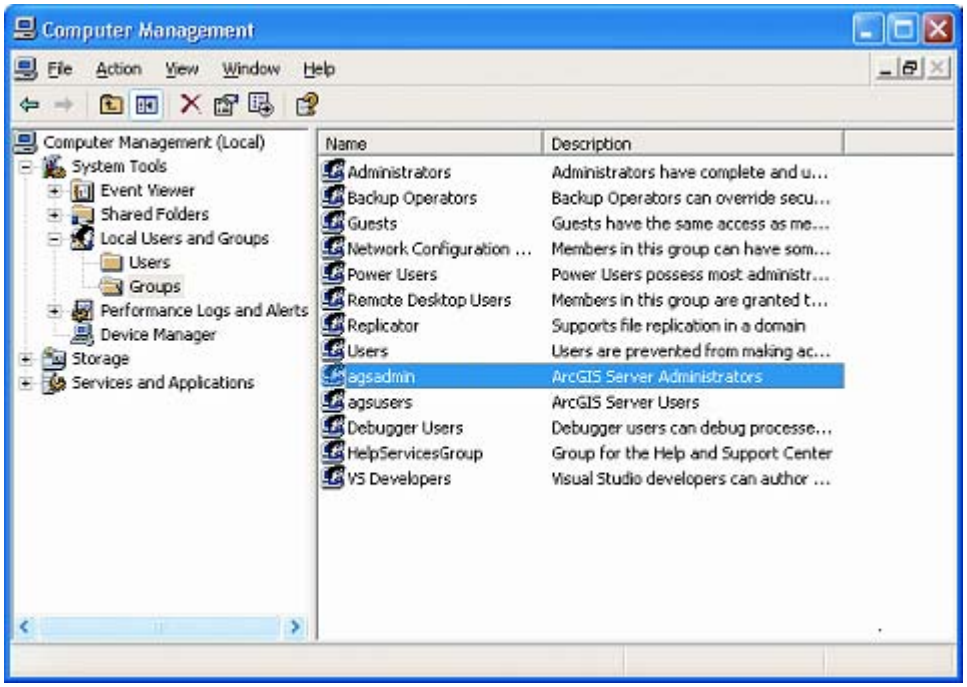
Adding administrative users to the agsadmin group

Before you attempt to connect to your GIS server, you need to grant yourself administrative access to it. You do this by adding your operating system account to the **agsadmin** group, which contains a list of users who can administer the GIS server. If there are others in your organization that need to administer the GIS server, you can add their accounts as well.

The accounts you add to this group will be able to add, delete, and modify services running on the GIS server.

Once you add an account to the agsadmin group, you do not need to add it to the **agsusers** group.

1. On the SOM machine, click **Control Panel** > **Administrative Tools** > **Computer Management**.
2. Expand **System Tools** > **Local Users and Groups** > **Groups**.
3. Right-click the ArcGIS Server administrators group, **agsadmin**, and click **Properties**.

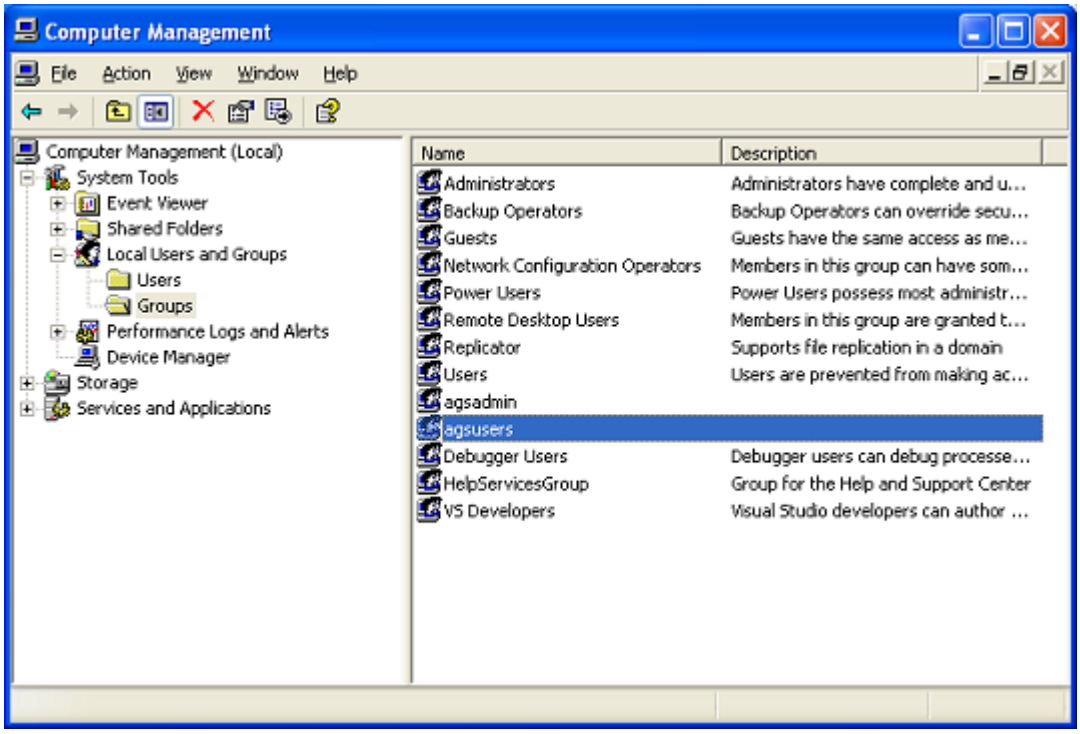
4. 

5. On the **Properties** dialog box, click **Add**. On the dialog box that appears, add your operating system account and any other accounts to which you want to grant administrative access to the GIS server. The account you add will be the account that you typically run ArcCatalog through.

Adding users to the agsuser group

The accounts that you add to the ArcGIS Server users group, **agsusers**, are those users who you expect to access the services over local area network (LAN) connections. The accounts that your Web applications run on should also be in this group. These users will not be able to administer the GIS server.

1. On the SOM machine, click **Control Panel** > **Administrative Tools** > **Computer Management**.
2. Expand **System Tools** > **Local Users and Groups** > **Groups**.
3. Right-click the ArcGIS Server users group, **agsusers**, and click **Properties**.



4. On the **Properties** dialog box, click **Add**. On the dialog box that appears, add those operating system accounts to which you want to grant access to the GIS server. These are typically the accounts that people use to log in to the network from their own computer.

Setting up SSL

This topic describes how to set up your Internet Information Services (IIS) Web server to serve Web pages and other resources via Secure Hypertext Transfer Protocol (HTTPS). HTTPS is the standard approach for secure communications between client and server over the Internet. HTTPS enables the communication to be encrypted so that if it is intercepted, the third party cannot easily view and use the information. You should ensure that any sensitive information transferred to your server is secured through HTTPS. Any login should use HTTPS, as should pages that transfer data that you do not want to be viewed by parties other than the end user.

To serve pages and other resources via HTTPS, you must obtain and install a certificate for Secure Sockets Layer (SSL) on the IIS server. Normally you obtain the SSL certificate from a certificate authority (CA) that is generally recognized by browsers and other Internet-capable client software. If the certificate is issued by a CA that is recognized by the browser, the communication with the server occurs with no special action required by the user. Hence, for production servers, obtaining a CA-issued certificate is highly recommended.

Setting up users and roles in SQL Server

Microsoft SQL Server is one option for storing your users and roles. You can use either the full SQL Server or the SQL Server Express edition. If you have a version of SQL Server installed, you can use it to store your users and roles. If not, SQL Server Express, is included with the Workgroup level of ArcGIS Server, as described below. Once installed, you can allow ArcGIS Server Manager to create a database within SQL Server for users and roles. If you already have a database with the correct schema for ASP.NET membership and roles, you can use that database when configuring users and roles in ArcGIS Server Manager.

Managing users

The ***Security*** tab in Manager contains a **Users** link where you can view a list of your users. The appearance of this panel varies depending on where you're storing your user information. If you're using SQL Server as your user store, you have the option to add, modify, and delete users within Manager. If you are using a custom provider for users, you may be able to add and modify users if the provider supports it. If your users are Windows users, the view on this panel is read-only. When the view is read-only, you need to use the tools inherent in Windows or your custom provider to add, modify, and delete users.

Managing roles

Roles, or groups, allow you to assign permissions to multiple users at once. This usually makes it easier to maintain security for your site.

To view and modify roles, click the ***Security*** tab in Manager and click the **Roles** link in the table of contents. This displays a list of roles available on your GIS server.

You can view members of a role by clicking the plus (+) icon to the left of the role name. This expands the role display to show a scrolling list of users in the role.

If you're storing your roles in a SQL Server database, you will see a list with options to add, edit, and delete roles. If you're using Windows groups for your roles, this view is read-only. Your system administrator can help you manage roles that are stored as Windows groups. If using a custom provider, Manager may enable editing roles if the custom role provider implements the required .NET API methods to enable editing of roles. If Manager cannot edit the roles, then use the provider's tools to manage roles.

How to Publish services

Before publishing a service, you need to create the GIS resource that the service will reference. For a full list of GIS resources that can be published as services, see What types of services can you publish? Most GIS resources require that you use ArcGIS Desktop to create them.

Publishing a GIS resource to the server

There are two ways to create services in ArcGIS Server. These are described as Publish a GIS Resource and Add New Service. Choosing Publish a GIS Resource does the following:

- Prompts you for only the minimum amount of information needed to publish a GIS resource as a service.

- Sets service properties such as pooling, recycling, and time-outs to the default values.
- Allows you to publish associated services automatically. For example, if you choose **Publish GIS Resource** to publish a map document with a tool layer, you have the option to enable the geoprocessing capability and automatically create a geoprocessing service that works with the map service. If you choose **Add New Service** in this scenario, the geoprocessing capability is not available and you have to create the map and geoprocessing services one at a time.

Publishing a GIS resource to the server in Manager

1. Click the **Services** tab in Manager.
2. Click **Publish GIS Resource**.
3. Browse to the resource you want to publish from the **Resource** drop-down list.
4. Optionally, change the default name of the service.
5. Choose which folder the service will be published to. You can either specify an existing folder or create a new folder. Click **Next**.
6. Choose the capabilities that you would like to enable. Depending on the type of the resource and the information it contains, you will see more or fewer available capabilities. Click **Next**.
7. Review the information about the service that will be created. If you will be working with the service through the Web, take special note of the service's URL. You can't enter this URL in a browser directly, but you can enter the URL and append ?wsdl to see the service's Web service definition and verify that the service is working correctly.

   Note that multiple Web service endpoints can be created when you specify certain capabilities (for example, the KML capability for map services creates an additional endpoint suffixed KmlServer in addition to the default map service).

8. If you want to change any of the properties, you can click **Previous** to go back. Otherwise, click **Finish** to publish the resource.

Publishing a GIS resource to the server in ArcCatalog

1. In the Catalog tree, navigate to the resource you want to publish. For example, navigate to a map document on disk.
2. Right-click the resource and click **Publish to ArcGIS Server**.
3. Choose which server you want to publish the resource to, type a name for the service, then choose the folder in which the service will reside. Click **Next**.
4. Choose the capabilities you would like to enable for the resource and click **Next**. Different types of resources expose different types of capabilities.
5. Review the information about the service that will be created. If you will be working with the service through the Web, take special note of the service's URL. You can't enter this URL in a browser directly, but you can enter the URL and append? WSDL to see the service's Web service definition and verify that the service is working correctly.

Note that multiple Web service endpoints can be created when you specify certain capabilities (for example, the KML capability for map services creates an additional endpoint suffixed KML Server in addition to the default map service).

Adding a new service

ArcGIS Server offers the following service types: map, geocode, geodata, geometry, geoprocessing, globe, and image. Before you can create a service, you must create the GIS resource that it will access. For example, a map service uses a map document, so you must create the map document before creating the service.

Adding a new service in Manager

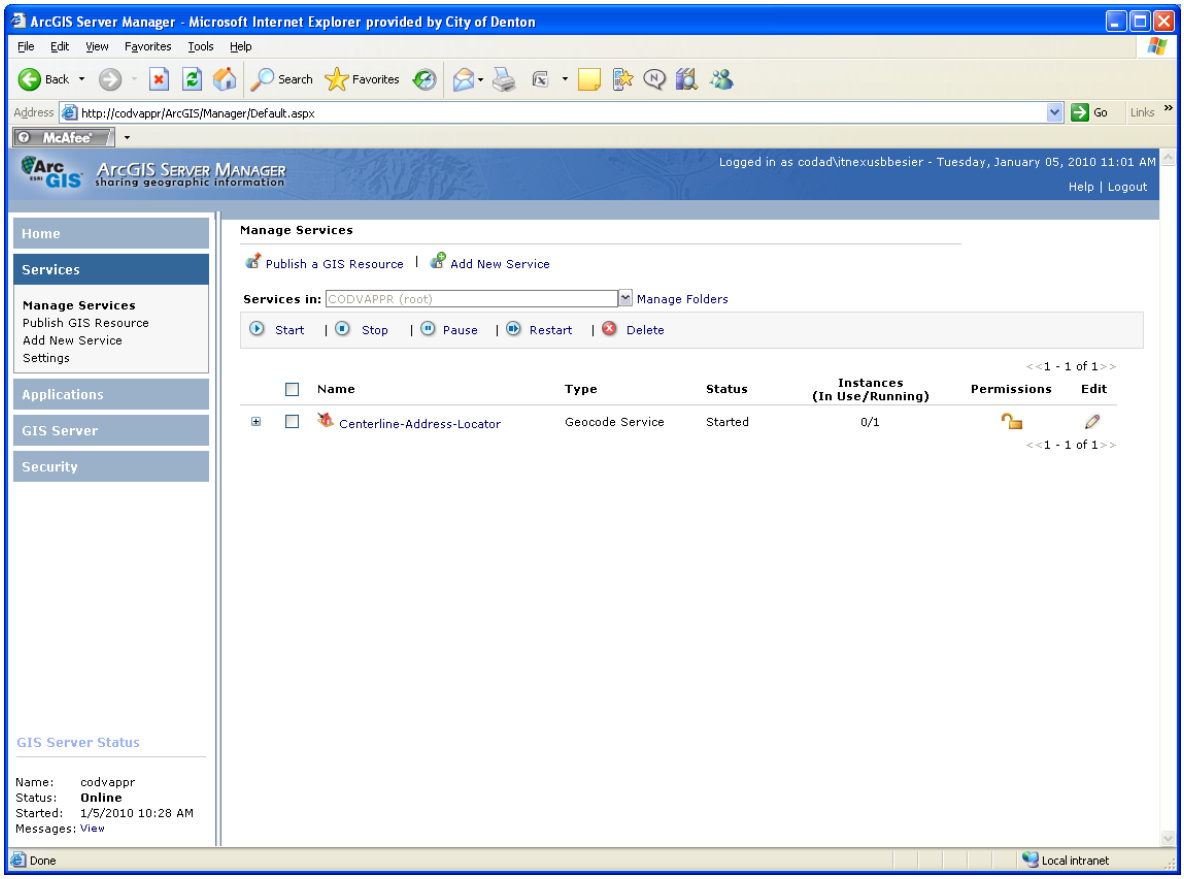
1. In Manager, click the **Services** tab.
2. Click **Add New Service**.
3. Type the **Name** of the service. This is the name people will see and use to identify the service. Be descriptive. The name can only contain alphanumeric characters and underscores. No spaces or special characters are allowed. The name cannot be more than 120 characters in length.
4. Click the **Type** drop-down arrow, click the service type, then click **Next**.
5. If the type of service you chose has any available capabilities, a new page appears where you can choose the capabilities you want to enable and set their properties. On this page, you can also choose whether Web access will be available for the service and the allowed operations for that Web access.
6. Click **Pooled** or **Not Pooled** and optionally change the maximum usage and wait times. Click **Next**.
7. Set the process isolation level and the recycling parameters. Optionally, choose to enable periodic checks for the validity of database connections in the service when the service is idle. Click **Next**.
8. Review the information about the service that will be created. Click **Yes, start the service right now** and click **Finish**.
9. Verify that your service is working properly. If the service is started and working correctly, you can see a thumbnail image on the ***Services*** tab in Manager when you click the plus (+) button next to the service name. If for some reason your service is not working as expected, you can review the log files for errors. Note that log files refer to services as server objects.

Starting, stopping, and restarting services

Starting, stopping, and restarting services are common actions you'll need to perform when administering ArcGIS Server. For example, you may need to stop a service to change some of its properties. On other occasions, restarting is often necessary for the service to recognize changes made to its properties.

How to start, stop, pause and restart a service

The commands for starting, stopping, and restarting services can be found in ArcGIS Server Manager and ArcGIS for Desktop. To access these commands, follow the steps below:



Starting a service

Starting a service makes it available for client access. When you start a service, the server instantiates the minimum number of instances you specified. As clients request the service, the server returns an available instance. If none are currently available, the server instantiates more instances to meet demand until the maximum number of instances is reached. At this point, any new clients that make a request for the service are placed in a queue for the next available instance.

Stopping a service

When you stop a service, the server immediately removes all instances of that service from the server. This frees up any machine resources that were dedicated to the service. Clients that were using the service may fail to work properly because the service is no longer available.

Pausing a service

When you pause a service, the server refuses any new client requests for the service. However, existing clients can complete their use of the service. Pausing a service doesn't remove instances from the server. You might pause a service if a data source required by the service is not available. For example, if your map services reference an Arc SDE server containing a geodatabase, and that Arc SDE server is down for maintenance, you might pause the map service until the database is available again. Because the instances of the service are not removed when you pause it, it's much quicker to start a paused service than one that is stopped.

Restarting a service

The **Restart** command stops the service, then immediately starts it again.

Removing a service

When you remove a service from your server, any client application using the service will no longer be able to access it, which may result in an error being returned to the client. You may want to pause a service before deleting it. This will prevent any subsequent client's access and allow existing clients to finish using the service.

Adding a GIS server folder in Manager

1. In **Manager**, click the **Services** tab and click **Manage Services**.
2. Click the **Manage Folders** link.
3. Click **Add**.
4. Type the name of the folder and click **OK**.

Adding a GIS Server folder in ArcCatalog

You can organize your services in folders maintained by the GIS server. To add folders in ArcCatalog or the ***Catalog*** window in ArcMap, you must have an administrative connection to the server. To add a folder, follow these steps:

1. Right-click the name of the server in the Catalog tree and click **New Folder**.
2. Type a name for the folder.

As long as the folder is empty, you can rename it. Once the folder contains a service, you cannot rename the folder. You cannot drag services between folders.

Tuning and configuring services

ArcGIS Server makes it easy to publish services right away because it sets many of the default service properties for you; however, if hundreds or thousands of users will be accessing your services, or if users will be performing state full operations such as editing on your services, you'll want to change the default service property values to best accommodate your deployment. This topic provides an overview of some of the properties and techniques that you can use to best configure your services.

Caching services

Map caching is a very effective way to make your ArcGIS Server maps run faster. When you create a map cache, the server draws the entire map at several different scales and stores copies of the map images. The server can then distribute these images whenever someone asks for a map. It's much quicker for ArcGIS Server to hand out a cached image than to draw the map each time someone requests it. Another benefit of caching is that the amount of detail in the image doesn't noticeably affect how quickly the server can distribute the copy.

How to stop, start, or pause a service using ArcCatalog

1. In ArcCatalog, right-click a service to reveal the context menu for starting, stopping, pausing, or restarting the service. Alternatively, you can display the ArcGIS Service Administration toolbar that contains these same operations.

How to remove a service using Manager

1. Click the Services tab.
2. Check the box next to the service you want to remove.
3. Optionally, pause the service by clicking Pause. After you do this, check the box again.
4. Click Delete.

How to remove a service using Arc Catalog:

1. Make an administrative connection to the GIS server containing the service you want to delete.
2. Optionally, pause the service by right-clicking the service and clicking Pause.
3. Right-click the service and click Delete.

Applications and Processes for Cityworks Users:

The Watersql01 Cityworks data is stored in the Microsoft SQL Server 2014 (9.0.5057)
User's retrieve/update/add data via Cityworks (2015) client software which connects using an ODBC connection connect to the database. The primary usage of this application is for Work order Management.

The SQL version is: 12.0.4487.0
The Cityworks version is: 2015 Platform 4.0 SP3 – Revision 2018.08.18
The OS version on the server is: Windows 2012 R2 Standard

Startup Procedure for Cityworks Users:

1. Remote Desktop Connection to server (watersql01, IP# 10.5.5.15)
2. Log in to the Windows Server 2012 R2 Enterprise as AD/user with DBA privilege
3. Once restored, Verify Cityworks database is online. A snapshot of Watersql01 should restore all system functions with privileges.

To stop or shutdown Cityworks Database to Users:

1. Remote Desktop Connection to server (watersql01, IP# 10.5.5.15)
2. Log in to the Windows server 2012 R2 Enterprise AD/ user with DBA privilege
3. Right click database name, go to tasks and take offline.

Miscellaneous Cityworks Information:

1. Server name is watersql01 (IP# 10.5.5.15)
2. Connection information for Microsoft SQL Native client
   - Hostname = watersql01
   - Database = Cityworks

Cityworks Server AMS 2015 Information:

1. Server name is cityworksweb01 (IP# 10.5.4.115)
2. Log in to the Windows Server 2012 R2 Enterprise as AD/user with DBA privilege
3. Once restored, Verify Cityworks database is online. A snapshot of watersql01 should restore all system functions with privileges.

Cityworks Database Upgrade:

1. Install Cityworks Desktop 2015 if it isn't already installed on the server or a computer with access to the Cityworks database (Database Manager and Designer at a minimum). Install the software using the Custom Setup option; this will install DB Manager and Designer.

2. Create the **cwweb** user in the Cityworks database.

3. Create the **cwweb_user** database role.

4. Associate **cwweb** to the **cwweb_user** database role.

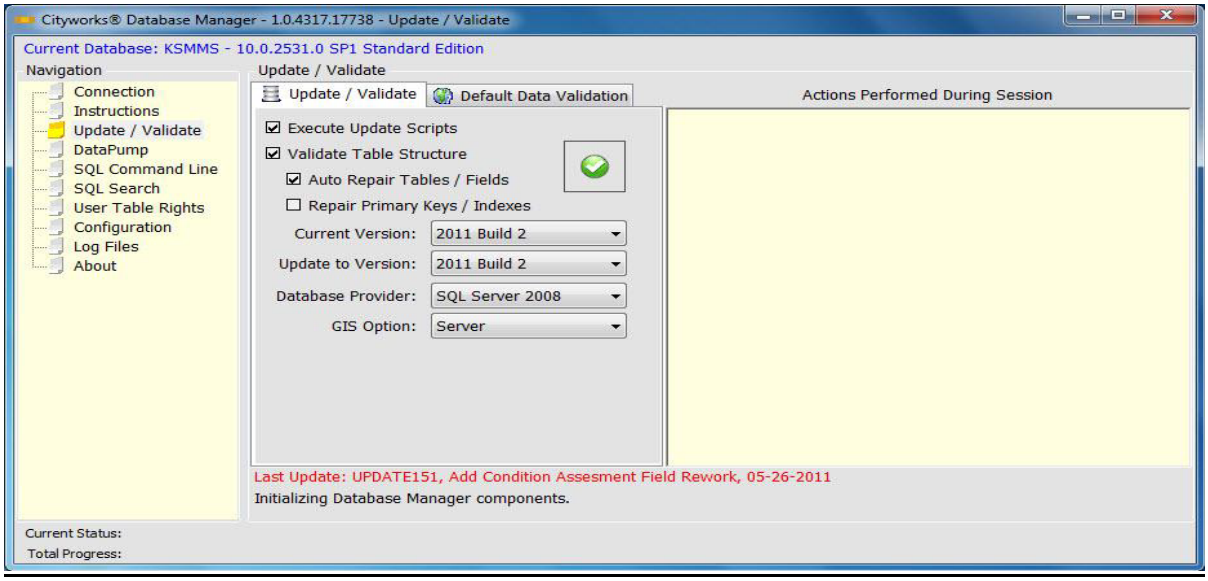
5. Add **cwweb** to the **pwdb_user** role.

6. Create an ODBC Connection to the database (if not there already).

NOTE: If this machine has a 64-bit OS, use the 32-bit ODBC application found at C:\Windows\SysWOW64\odbcad32.exe. The Cityworks Data Source will not be visible in the login splash screen if the Data Source was created by the 64-bit ODBC executable.

7. Open Database Manager to update the Cityworks database to the latest version of Server AMS/PLL. Be sure that **Server** is selected from the **GIS Option** dropdown, as seen in Figure 1.

NOTE: Make certain the **Validate Table Structure** checkbox is checked in order to make sure the stored procedures are populated.



9. If upgrading from a Cityworks database prior to 2011 B2, run the EntityUID Migration Tool. To learn how to perform this process along with more about why it is required, please see 10598-INFORMATION: EntityUID Migration Tool for Server AMS/PLL 2011 or Newer.

NOTE: Prior to Server AMS/PLL 2011 Build 2, the GIS feature or object class was linked to Cityworks via the AssetID, FacilityID, or EquipmentID fields. In Server AMS/PLL 2011 Build 2, a field named ENTITYUIDFILED is being utilized in the ASSETIDFIELD table. This means there is one field that has to be tracked to allow GIS data to be linked from the Cityworks database to the GIS database. Setting a sole ENTITYUIDFIELD value alleviates the dependency on ObjectID. For example, if the ObjectID value changes (which can happen when importing data for example) there is no need to run the Geodatabase Sync Tool in Designer for the purposes of Server AMS/PLL.

The EntityUID Migration Tool was created to quickly set the ENTITYUIDFIELD for multiple entities at the same time. The tool does not allow users to set the Entity Uid Field to a value other than AssetID, FacilityID, or EquipmentID. However, this can be done in Designer via the Field Configuration form -> Asset Group Definitions -> Asset Setup -> Designer. This tool is **required** when upgrading from versions previous to Server AMS/PLL 2011 Build 2.

Server AMS Installation:

If you are updating an existing version of Server AMS/PLL 2010x, skip to the Upgrading Existing Server AMS/PLL 2010x Installation section by clicking here.

IMPORTANT: A new install of Server AMS/PLL is required when implementing for the first time and when migrating from version 4.5 to 2013.1. The Create Domain Administrator Login section is not applicable for customers coming from Server AMS/PLL 4.5 because that step has been performed previously.

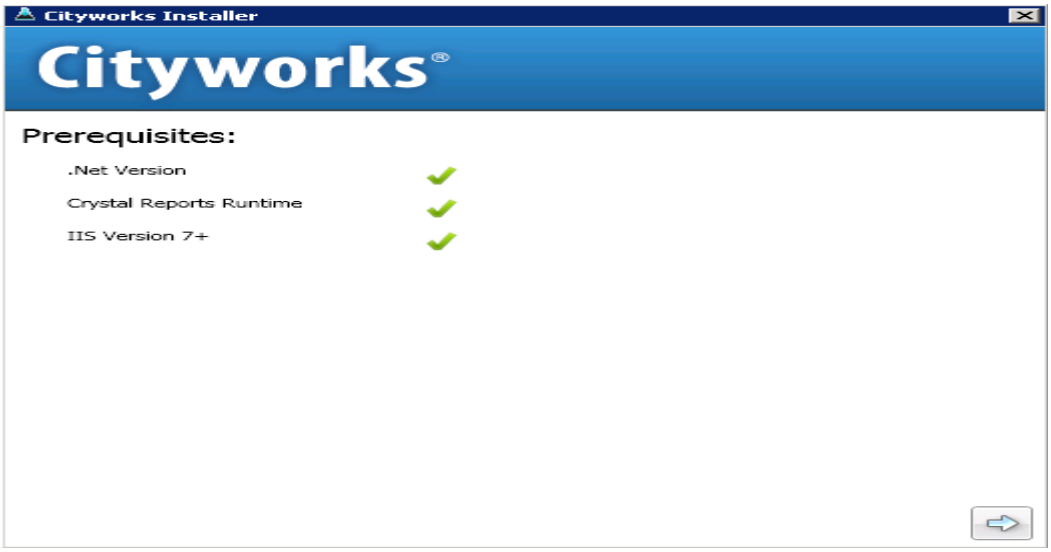
1. Navigate to where the **Server Installer** application is located.

2. Double-click on the **Cityworks Server Installer** icon to launch the application.

NOTE: This screenshot is an example only. Your Server AMS/PLL software version may be different.

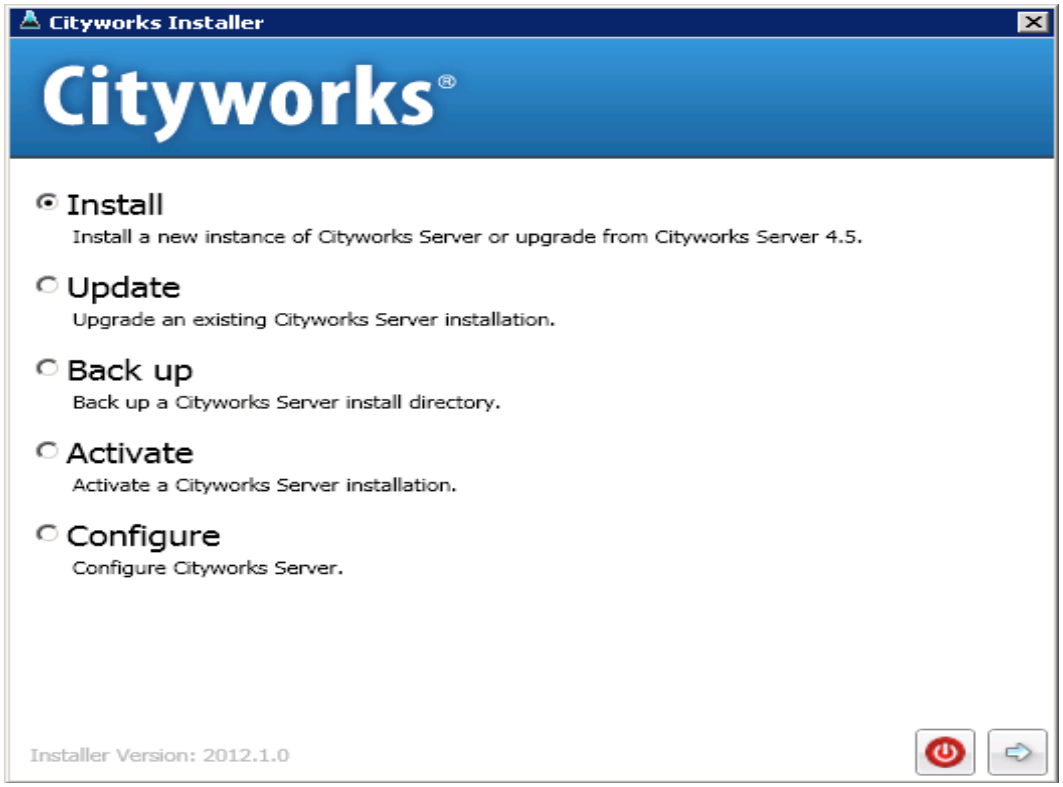
The Server installer automatically checks to make sure all the prerequisites are installed. If an application is missing, the installer will display the following message: **Cannot continue please install the needed prerequisites, then try again**.

If all the prerequisites are properly installed, 3 green checkmarks will display.



3. Click Next .

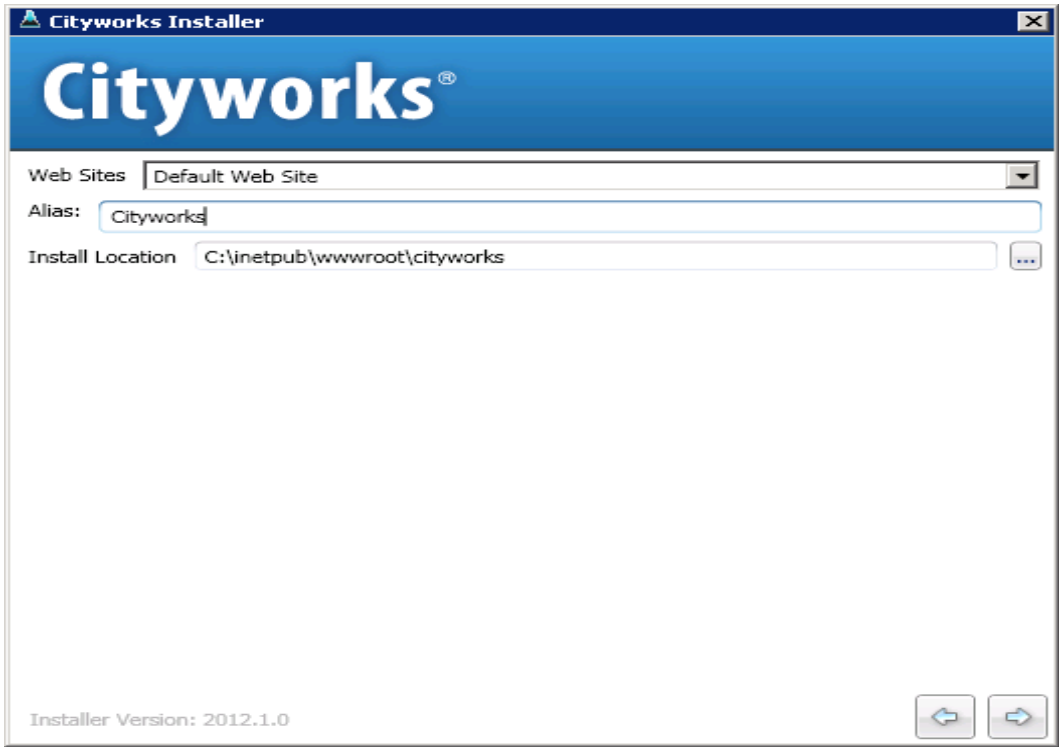
4. The **Cityworks Installer** main window will display.



The Server AMS/PLL Installer includes the following functionality:

- **Install**: this option is typically used when first creating a Server AMS/PLL website or when upgrading an existing Server AMS/PLL 4.5 website.
- **Update**: This option is typically used when upgrading an existing Server AMS/PLL 2010x website.
- **Backup**: Backup the Server AMS/PLL website.
- **Activate**: Activate a Server AMS/PLL license file.
- **Configure**: Configure the Server, SMTP options, and the Impersonate User credentials.

5. Select the **Install** radio button.
6. Click **Next**.

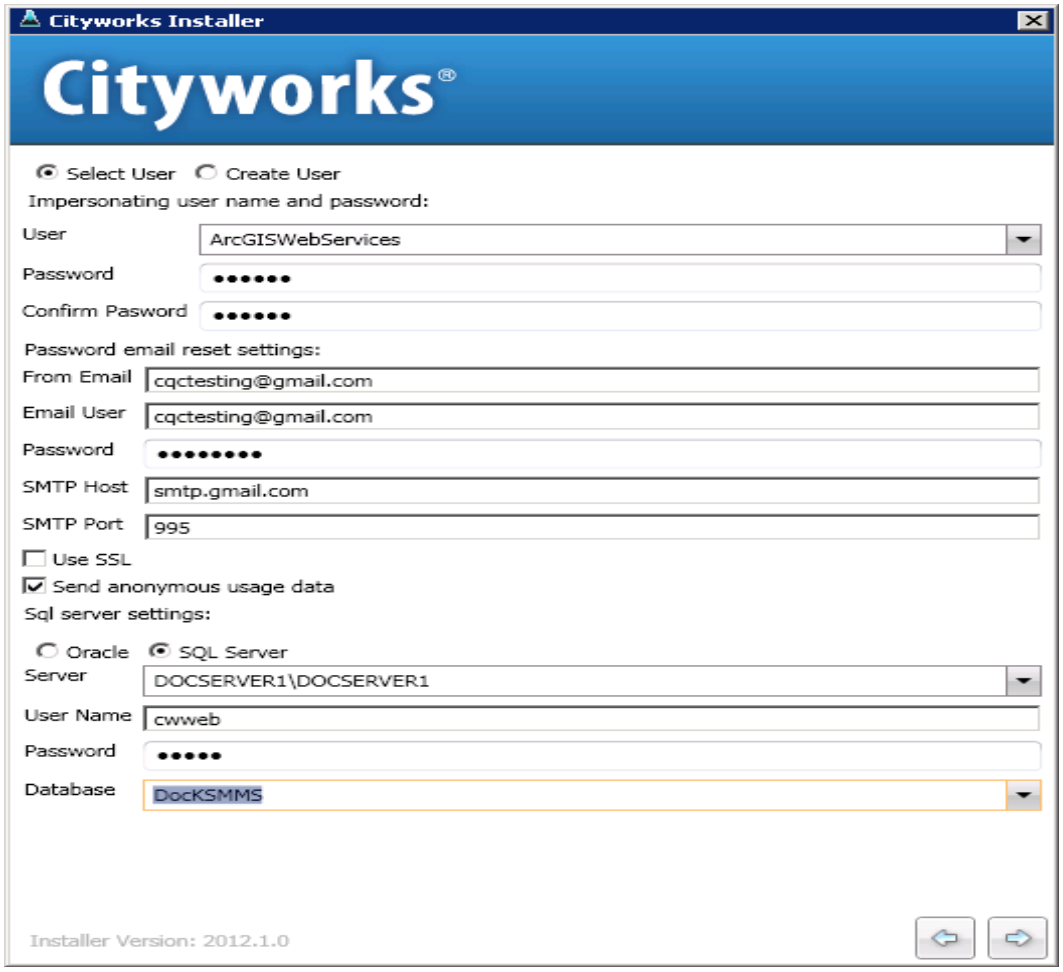


Select a **Web Site** under which the Server AMS/PLL will be installed, in this case the **Default Web Site** option.

7. Give the virtual site a new **Alias** and define the physical path where the AMS/PLL Server files will be housed if the path will be different from the default.

NOTE: The "Default Web Site" or the default directory from which Server AMS/PLL is published will be added to its own application pool, the CityworksAppPool, which is managed by the NETWORK SERVICE user, .NET Framework Version v4.0, and set in Integrated managed pipeline mode via the installer now. Additionally, if there is already an application pool of the same name present, the installer simply updates the settings to match what has been specified for the particular build of Server AMS/PLL involved. However, the CWPWebService directory must reside in the Classic .NET AppPool for those employing PLL.

9. Click **Next.**



10. Select the impersonate user on the machine you wish Server AMS/PLL to utilize.

NOTE: ArcGIS Server 10.1 no longer uses SOM and SOC. At 10.0, you had to manage accounts for each, but at 10.1, you'll only have to manage one account. This is the ArcGIS Server Account (default name assigned isArcGIS), which runs the ArcGIS Server process service. This service enables the hosting of GIS services. This is the account that will now be used as the impersonate user.

This user, regardless of who it is, would need to reside on the server running ArcGIS Server and the server running Server AMS/PLL in a distributed environment.

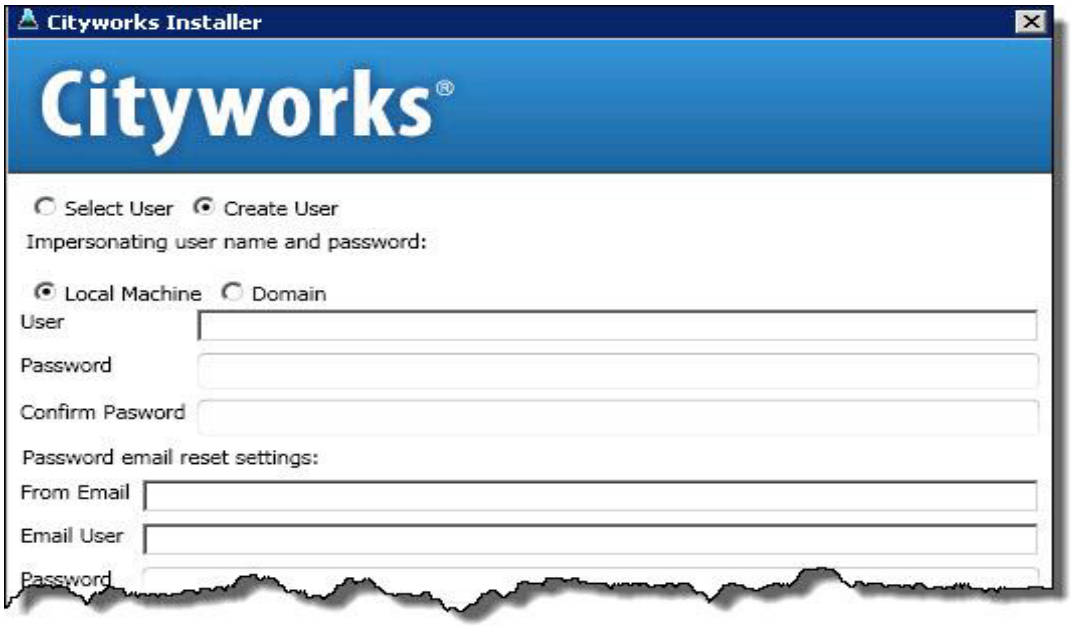
10. Enter the impersonate user password and confirm it.

11. Enter the appropriate email account information to enable email functionality in Server AMS/PLL (including recovering forgotten passwords).

12. Select the appropriate database type for the Cityworks database and the server on which it resides.

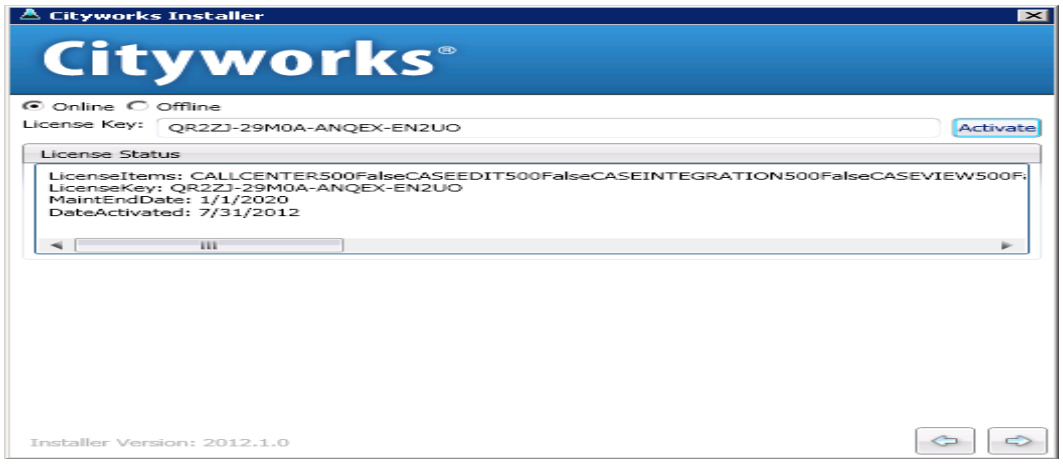
13. Enter the appropriate information for a user who has at least SELECT privileges on the Cityworks database.

If you want to create your own impersonate user, click the **Create User** option.



14. Choose the Local Machine or Domain option and enter the user information and password.
NOTE: If utilizing PLL, the user must be AZTECA in order to log into the site successfully.

15. Click **Next**.

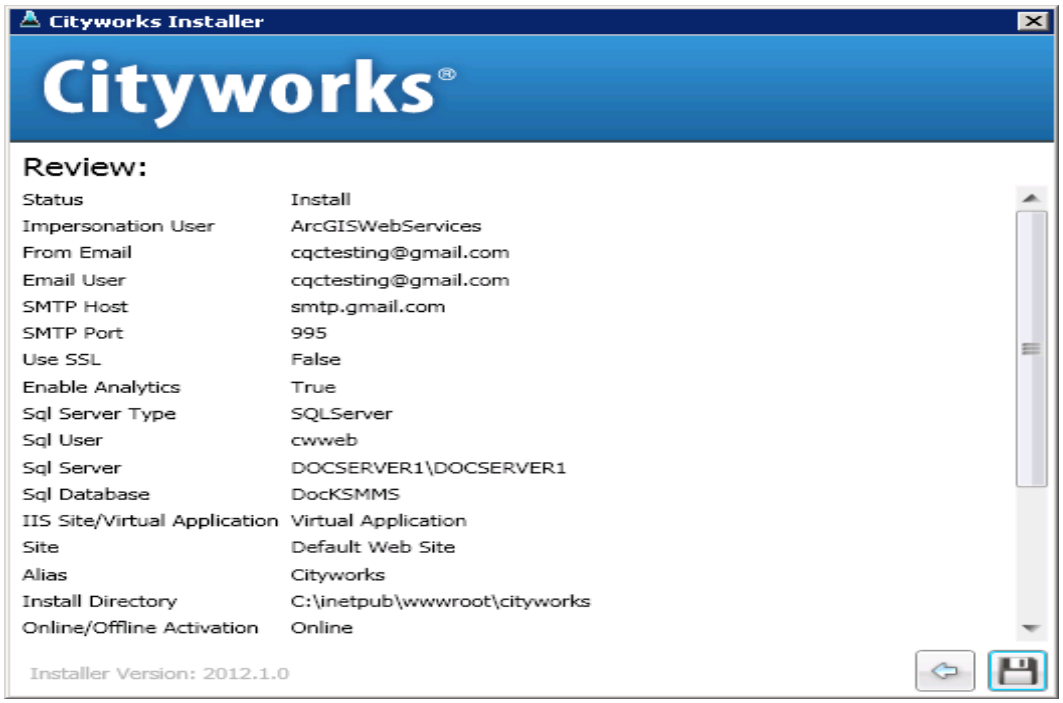


16. Select the online or offline software activation radio button.

Online Activation

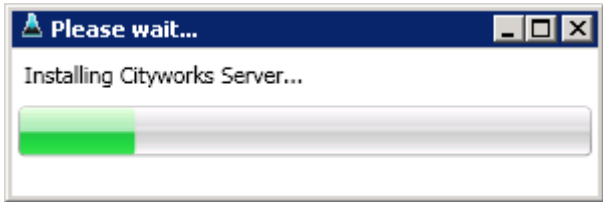
1. Enter the **License Key** data and click **Activate**.

2. When the license information has been retrieved and displays in the License Status section, click **Next**.



3. Verify that the site information is correct (Figure 6), and click **Save**.

A dialog box displays confirming that you want to move ahead with the website creation.



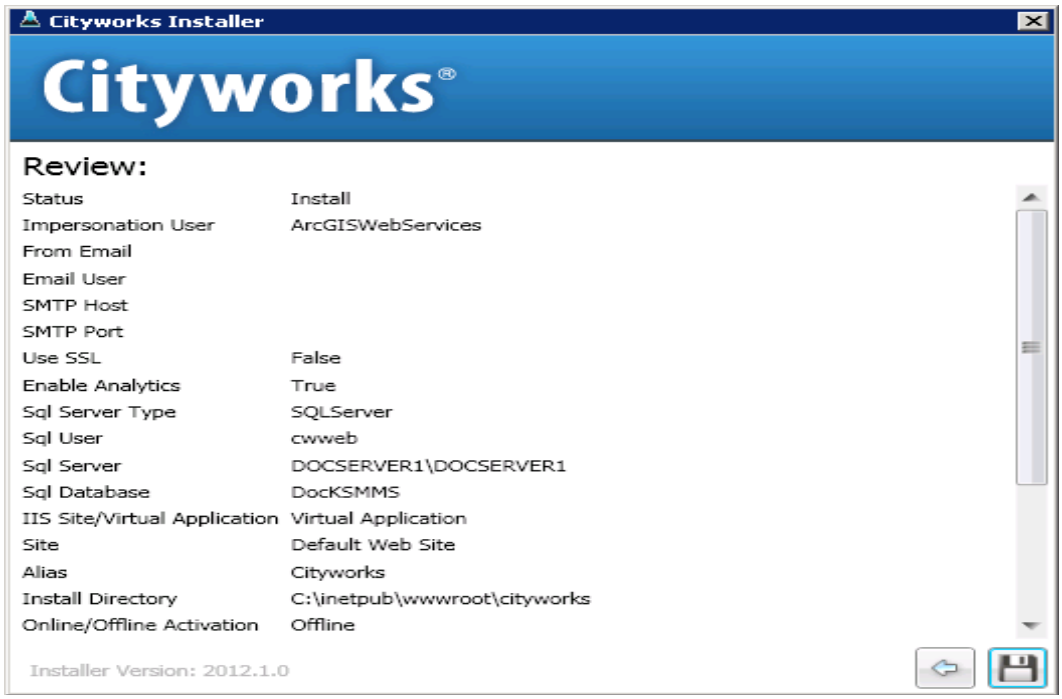
Offline Activation

IMPORTANT: There are rare cases when offline activation is necessary because a site is unable to hit the authorization servers Azteca utilizes. This is usually caused by a proxy server being involved with Internet access at the site.

1. Enter the **License Key** data and click **Select Location**.

This will bring up a dialog box that will allow the user to determine where to save a text file that contains site-specific codes needed to activate the product.

2. Save the text file.
A window will display allowing the user to review the site details.



3. Click **Save**.

A dialog box displays confirming that you want to move ahead with the website creation.

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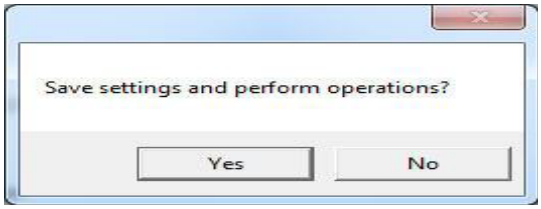
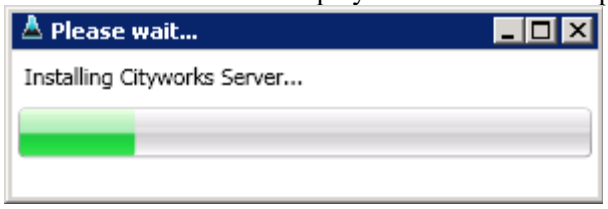
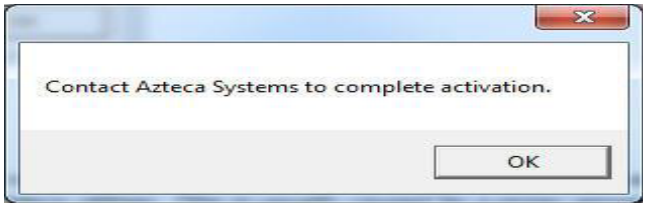


4. Click **Yes**.

A box with a status bar displays while the virtual application is being created.



A dialog box informing the user to contact Azteca Systems is generated.



1. Click **OK**.

2. Send an email to your Cityworks Customer Support Representative with the text file attached.

3. Your Customer Support Representative will generate an activation file that will provide the required cwlicense.txt file and send an email to you with the file attached.

4. Save the cwlicense.txt to the <server install directory>\WebSite\License folder.

IMPORTANT: After your site has been created, you must assign **Modify** rights to the **Impersonate** user in the **PrintDocx**, **Uploads**, **WorkManagement\Printing\Media**, and **Reports** folders. The impersonate user also needs to be added to the **IIS_IUSRS** group.

Make sure that the **NETWORK SERVICE** user has at least **Read** permissions to **C:\Windows\Temp**. Please be aware that some configurations may require that the **NETWORK SERVICE** user even have **Modify** permissions.

As well, the **Impersonate** user may need to be granted **Read** permissions to **C:\Windows\ServiceProfiles\NetworkService\AppData\Local\Temp**. This is because the temporary report files written to allow for simultaneous access to the reports reside here instead of the more common **C:\Windows\Temp** directory.

Upgrading Existing Server AMS 2010 or Higher Installation:

IMPORTANT: The Update option is the preferred method for updating versions of Server AMS/PLL 2010x or higher. This will allow customizations, print templates, application settings, etc., to carry over seamlessly. The Update option is only available in the installers built after the release of Server AMS/PLL 2010. Make sure all users are out of the application and run an **iisreset** from the command prompt with a user that has administrative privileges to the application server to make sure any lingering connections are cleared.
During the Update Process, the Server Installer backs up the entire install which includes CWPWebService (Permitting Web Services) (before 2011 B2, as this logic is now incorporated in the core code), PublicInterface (Permitting Public Interface), and Website (Cityworks Server root folder).

The installer places the backup in a folder found at: %programdata%\Cityworks_Server_MM-DD-YYYY_HH-MM

The installer also creates a zip file of this backup and places it where you direct.

During the update process it will restore the following items:

- PrintDocx folder
- WorkManagement\Printing\Media folder
- Reports\Crystal folder
- XML folder
- Web.config
- WebConnectionStrings.Config
- Settings from WebAppSettings.config
- cwlicense.txt.

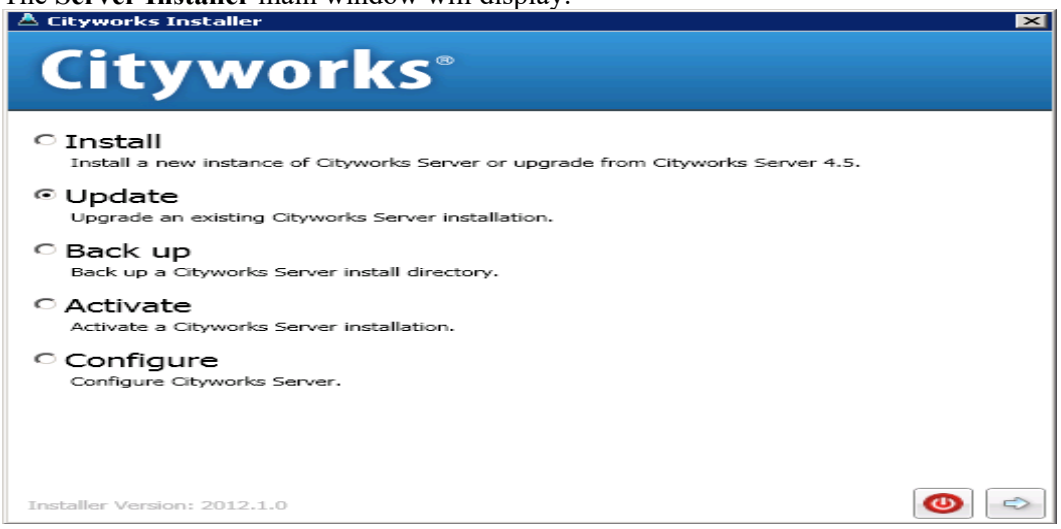
If a manual install is required, you can find the install files at
…\Users\<user>\AppData\Local\Temp\2\Cityworks.Server.Installer

5. Navigate to where the Server Installer application is located.

6. Double-click on the **Cityworks Server Installer** icon to launch the application.

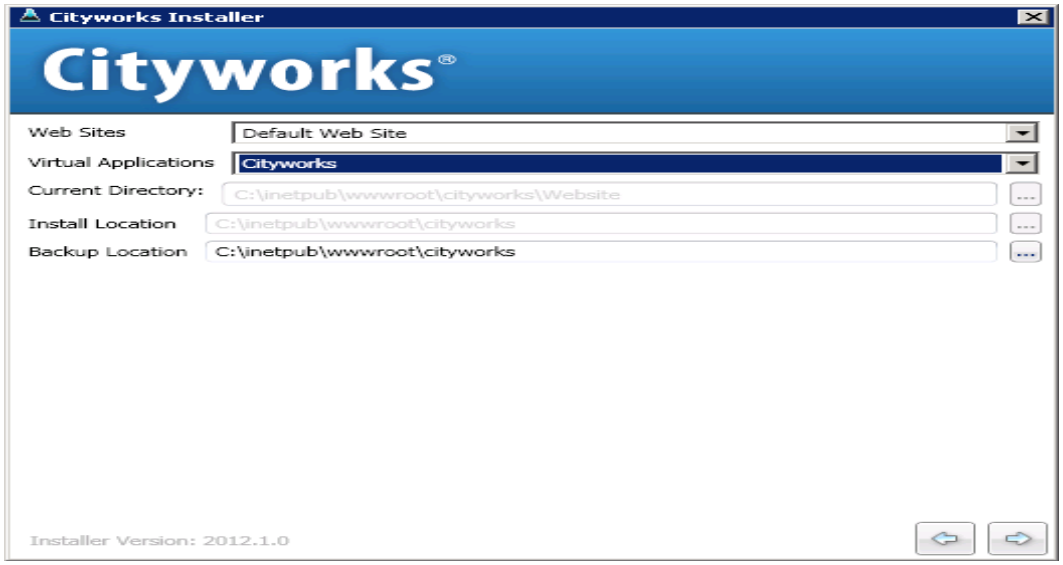
NOTE: This screenshot is an example only. Your Cityworks software version may be different.

The **Server Installer** main window will display.



7. Select the **Update** radio button.

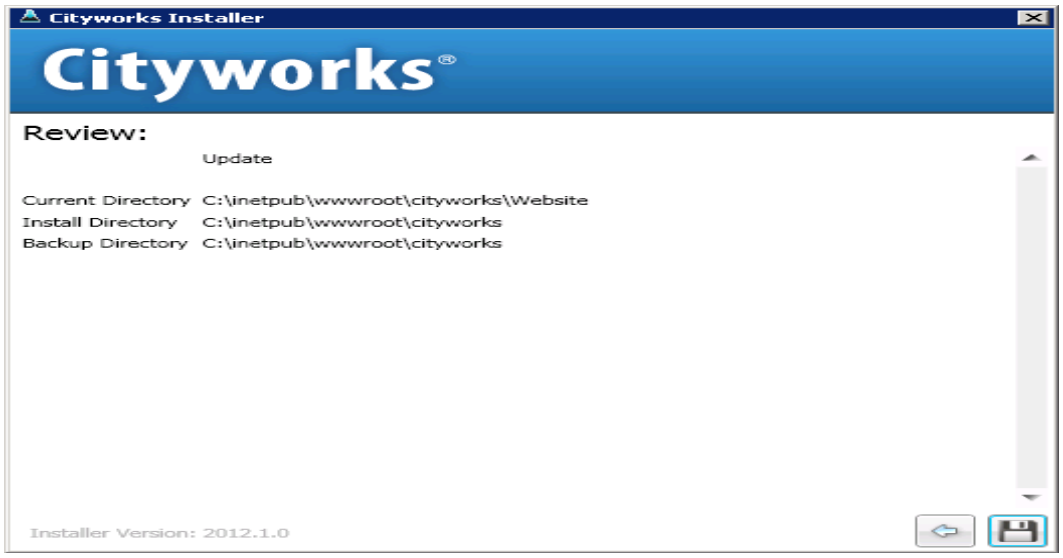
8. Click **Next**



9. Select the web site and the virtual application to be updated.

10. Confirm the current site information, and change the install location for the updated site and/or the backup location for the existing site, if desired.

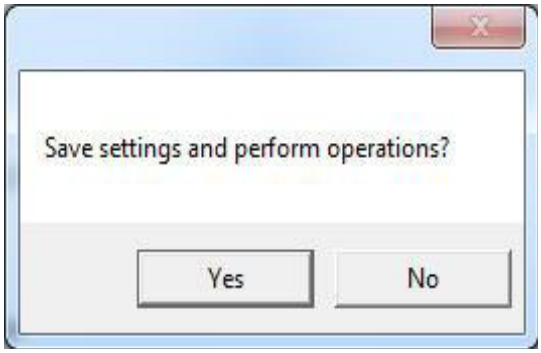
11. Click **Next**.



Azteca Systems, Inc. 22 Server AMS/PLL Installation and Update Process

12. Confirm the update information is correct and click **Save**.

A dialog box displays confirming that you want to move ahead with the website update.



13. Click **Yes**.

A box with a status bar displays while the site is being updated.

IMPORTANT: After upgrading your site to a new version, you must reassign Modify rights to the Impersonate user in the PrintDocx, Uploads, WorkManagement/Printing/Media, and Reports folders.

NOTE: The **Default Web Site** or the default directory from which Server AMS/PLL is published will be added to its own application pool, the CityworksAppPool, which is managed by the NETWORK SERVICE user, .NET Framework Version v4.0, and set in Integrated managed pipeline mode via the installer. Additionally, if there is already an application pool of the same name present, the installer simply updates the settings to match what has been specified for the particular build of Server AMS/PLL involved.

Startup Procedure for ARCSDE Users:

1. Remote Desktop Connection to server (GISSQL01, IP# 10.5.4.112)
2. Log in to the Windows Server 2012 R2 Standard 64-bit as AD/user with DBA privilege
3. Once restored, Verify CODGIS database is online. A snapshot of GISSQL01 should restore all system functions with privileges.
4. Services file may require ARCSDE Services (esri_sde) may need restarting.
5. Services SQL Server (GISSQL) may need restarting.
6. Database: CODGIS
   Datafile Location: E:\GISData\CODGIS.mdf
   Logfile Location: F:\GISLog\CODGIS.ldf
   SQL Server Roles: (each user should belong to one role)

CODAD\Arc_GIS – Read only access to all data and locators
CODAD\ArcGIS_Editors – Edit premission on all datasets

To stop or shutdown ARCSDE:

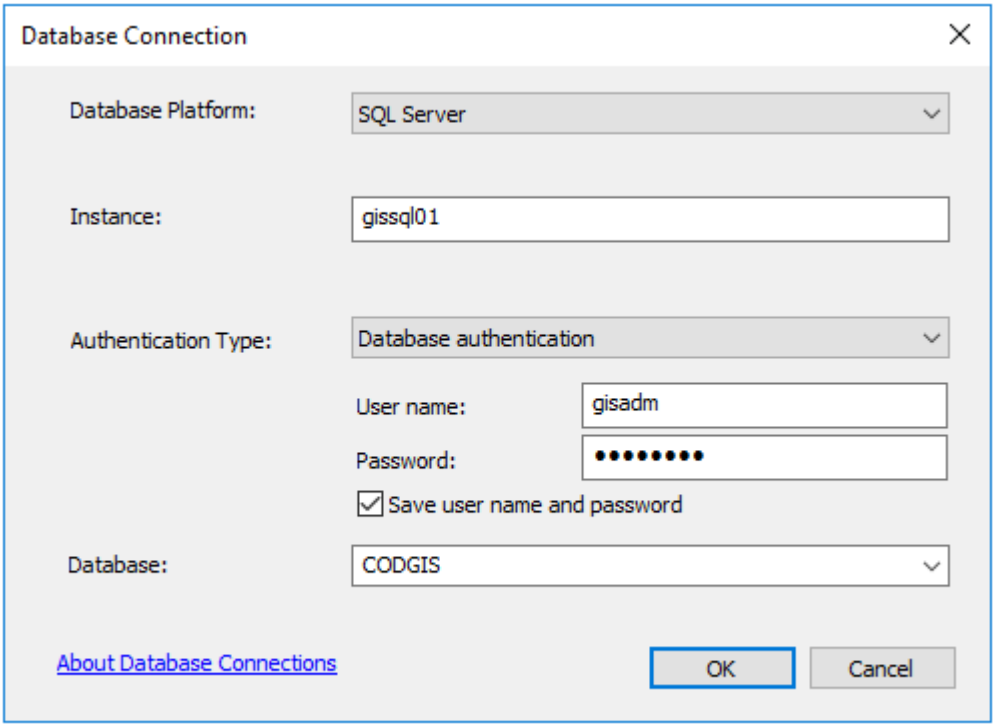
1. Remote Desktop Connection to server (GISSQL01, IP# 10.5.4.112)
2. Log in to the Windows server 2012 64-bit as AD/user with DBA privilege
3. Right click database name, go to tasks and take offline.
4. Services file may require ARCSDE Services (esri_sde) may need stopping.
5. Services SQL Server (GISSQL) may need stopping.

Applications and Processes:
The GIS database is stored in MS SQL Server 2014. It uses ArcSDE as the primary means to access and deliver data to end users who use ArcGIS client software such as: Arcview, ArcMap, ArcINFO and ArcGIS Server to access data.

Miscellaneous ARC CATALOG & ARCMAP Client Connection Information:

There are two ARCSDE databases on GISSQL01 server:

1. CODGIS is the GIS Graphics such as parcels, streets, various layers (Production version)
2. CODGISTEST is the GIS Graphics such as parcels, streets, various layers (Test version)
   To log in from client via ArcGIS applications ArcMAP and Arc Catalog:
   Database connection - server is: GISSQL01
   Database instance - the service is: sde:sqlserver:gissql01
   Database name - The database's name is: CODGIS or CODGISTest
   Database User and Password: AD/Operating system authentication
   Connection details TO arcsde layers: change to dbo.DEFAULT



1. Uninstall any previously installed version of ArcGIS that is not 10.4.1

Perform if ArcGIS already has been installed, but is a version that is lower than 10.4.1

2. Microsoft .NET Framework 4.6.1 Installation

Always install

1. Navigate to \\codad\support\User_Support\ArcGIS_Installation
   a. Run NDP461-KB3102438-Web.exe (Microsoft .NET Framework 4.6.1) using Administrator privilege
2. L-click "Next, Finish, OK, Install, or Close" until installation is complete

3. SQL Server Native Client Installation

Always install (choose 32-bit or 64-bit based on OS)

1. Navigate to \\codad\support\User_Support\ArcGIS_Installation
2. Run one of the following using Administrator privilege:
   a. Microsoft_SQL_Server_2012_SP1_Native_Client_32bit_135447.exe
   b. Microsoft_SQL_Server_2012_SP1_Native_Client_64bit_135448.exe
3. L-click "OK" for package extraction
4. Ensure the check box for "Launch the setup program" is checked
5. L-click "Close"
6. L-click "Next, Finish, OK, Install, or Close"

4. ArcGIS for Desktop 10.4.1 Installation

Always install

1. Navigate to \\codad\support\User_Support\ArcGIS_Installation
    a. Run ArcGIS_Desktop_1041_151727.exe using Administrator privilege
2. L-click "Next, Finish, OK, Install, or Close" until installation is complete
    a. If prompted to upgrade, click "No"
3. A dialog will pop up. Perform the following:
    a. Select the "Advanced (ArcInfo) Concurrent Use" radio-button
    b. License Manager = GISLICENSE01
    c. L-click "OK"

5. ArcGIS Pro 1.4 Installation

Only install if using 64-bit OS

1. Navigate to \\codad\support\User_Support\ArcGIS_Installation
    a. Run ArcGISPro_7198_154024.exe using Administrator privilege
2. L-click "Next, Finish, OK, Install, or Close" until installation is complete
3. Uncheck the box to run ArcGIS Pro
4. Navigate to \\codad\support\User_Support\ArcGIS_Installation
    a. Run ArcGIS_Pro_141_155222.msp using Administrator privilege
    b. L-click "Finish"
5. Once the application is running, perform the following:
    a. L-click "Configure your licensing options"
    b. License Type drop-down menu = Concurrent Use License
    c. License Level = Advanced
    d. License Manger = GISLICENSE01
    e. If not already checked, check all non-grayed-out boxes under the "Licensed" column (e.g.; 3D Analyst, ArcGIS Data Reviewer, etc.)
    f. L-click "OK"
6. Navigate to \\codad\support\User_Support\ArcGIS_Installation
    a. Run ArcGIS_Pro_141_155222.msp using Administrator privilege
    b. L-click "Finish"

6. ArcGIS for Desktop Background Geoprocessing Installation

Only install if using 64-bit OS

1. Navigate to \\codad\support\User_Support\ArcGIS_Installation
    a. Run ArcGIS_Desktop_BackgroundGP_1041_151688.exe using Administrator privilege
2. L-click "Next, Finish, OK, Install, or Close" until installation is complete

7. Folder Options

Always perform this step

1. L-click the Start menu
2. Type "folder options" (without the quotes)
3. In the dialog box, click the "View" tab

4. L-click the radio button in “Hidden files and folders” that reads “Show hidden files, folders, and drives”
5. L-click to uncheck the box for “Hide extensions for known file types”
6. L-click “OK”

8. ArcGIS for Desktop 10.4.1 (connection to databases/servers/folders)

Always perform this step

1. Navigate to \\codad\support\User_Support\ArcGIS_Installation
2. Copy the folder named “ESRI”
3. Navigate to C:\Users\<UserID>\AppData\Roaming
    a. <UserID> is the employee’s Employee ID Number
4. Paste the copied folder (Step 2) in the aforementioned directory (Step 3)
    a. If “ESRI” already exists in the directory, overwrite it with the new one

Startup Procedure for CARTEGRAPH Users:

Cartegraph Administrator Workstation - Operating System - Windows 7 Professional or Ultimate edition - Windows 10 - All Microsoft updates must be installed. - 64-bit only - Processor and Memory (RAM): - Must meet or exceed the requirements of the operating system. - Available Hard Disk: - 500 MB recommended - Monitor: - Minimum screen resolution 1200 x 768

Client Workstation - Operating System - Windows 7 Professional or Ultimate edition - Windows 10 - All Microsoft updates must be installed. 64-bit only - Processor and Memory (RAM): - Must meet or exceed the requirements of the operating system. - Available Hard Disk: - 500 MB recommended - Supported Web - Browsers: - IE 11 (Windows 7 or 10) - Edge (latest version) - Firefox (latest version) - Chrome (latest version) - Connectivity: - Always connected, External Internet Access is required - Monitor: - Minimum screen resolution 1200 x 768

Web Server - Operating System - Windows Server 2012, or 2012 R2 or 2016 (recommended) - .NET version 4.6.1 - All Microsoft updates must be installed. **Cartegraphweb01 – 10.5.4.110 – Windows Server 2012 R2 Standard – 64-bit Operating System**

Processor and Memory - Multi-core processor 2.0 GHz or faster - 8 GB RAM - 100/1000 Ethernet connection

IIS - Version 8, 8.5, 10 - SSL SHA-256 is required - Server requires Transport Layer Security (TLS) protocol version 1.2 enabled

Other - Internet Access - Outgoing SSL communication required from your web server.

Windows Local Group computer machine-level setting for Internet Explorer where "Do not save encrypted pages to disk" is set to disabled. See Cartegraph OMS Internet Explorer Encrypted Pages Setting to learn more about this setting.

Application Server - Operating System - Windows Server 2012 or 2012 R2 or 2016 (recommended) - .NET version 4.6.1 - All Microsoft updates must be installed. **Cartegraph01 – 10.5.4.108 – Windows Server 2012 R2 Standard – 64-bit Operating System**

Processor and Memory - Multi-core processor 2.0 GHz or faster - 8 GB RAM - 100/1000 Ethernet connection

IIS **-** Version 8, 8.5, or 10 - SSL SHA-256 or later is required - Server requires Transport Layer Security (TLS) protocol version 1.2 enabled

Other Environment Requirements **-** User ID with read and write access to the Project Home - User ID and DB ownership for the database - SMTP Compliant Email Server - Permissions to run the Windows Task Scheduler

Cartegraph recommends adding this server's URL to the Safe list on the firewall between the DMZ and internal network to eliminate flooding issues.

Database Server - Supported Database Types - SQL 2012, 2014, 2016(recommended) **Cartegraphsql01 – 10.5.4.109 – Windows Server 2012 R2 Standard – 64-bit Operating System**

Available Hard Disk - 5 GB or more additional free disk space

GIS Integration Map Support - Esri ArcGIS Online - Supports latitude/longitude coordinates only.

Esri ArcGIS Online or - Esri ArcGIS Server for Windows (Web Adaptor required for hosted deployments) - or Esri Portal for ArcGIS (Cartegraph on-premises only) or - Esri ArcGIS Server for Windows (On-Premises Deployment) - Version 10.3.1, 10.4.1, or 10.5.1 - Standard or Advanced Version - Cartegraph add-in for ArcMap (Recommended) - Cartegraph SOE for ArcGIS Server (Recommended) - ArcGIS Portal 10.4 requires use with data store. - Requires TLS 1.2 - Requires SHA256+ SSL certifications

Tablets - Apple iPad: iPad mini 2 or later - iPad Air or later - iPad Pro - iOS 10.2 and 10.3 - Setup with internet connectivity - Active iTunes account for initial download and subsequent updates - GPS enabled device

Smartphones - iOS 10.2 or 10.3 - Android 4.4 or later

Cartegraph Technical Specifications for On-Premise Deployments: Spring 2017

Client PC Recommendations - Operating Systems - Windows 7 or 10, Supported Web Browsers - IE 11 (Windows 7 or 10), Edge (latest version), Firefox (latest version), Chrome (latest version)

Monitor - Minimum screen resolution: 1200 x 768

Map Support - Esri Map Services, ArcGIS Server for Windows, ArcGIS Online

Connectivity - Internet connection required, Bandwidth Minimum: 3G

Server Requirements - Operating System

Windows Server 2012, 2012 R2, and 2016 - .NET version 4.6.1 - Multi-core processor 2.0 GHZ or faster - 8 GB RAM - 100/1000 Ethernet connection - IIS - Version 8, 8.5, or 10, SSL SHA-256 is required

Database Support - SQL Server 2012, SQL Server 2014, SQL Server 2016

GIS Integration Support - Esri ArcGIS Online, or Esri ArcGIS Server for Windows - Version 10.3.1, 10.4.1, or 10.5.1 - Standard or Advanced version - Cartegraph add-in for ArcMap - Cartegraph SOE for ArcGIS Server for Windows - Requires TLS 1.2 - Requires SHA256+ SSL certifications

Tablets - Setup with internet connectivity, Active GPS is recommended, Active iTunes account for initial download and subsequent updates

Apple iPad - iPad mini 2 or later, iPad Pro, iPad Air or later, iOS 10.2 and 10.3

Cartegraph One - iOS 10.2 or 10.3, Android 4.4 or later

Startup Procedure for CRW Archive Users:

1. Remote Desktop Connection to server (codsqlua, IP# 10.5.5.74)
2. Log in to the Windows Server 2003 R2 Enterprise as AD/user with DBA privilege
3. Once restored, Verify CRW database is online. A snapshot of codsqlua should restore all system functions with privileges.

To stop or shutdown CRW Database to Users:

1 Remote Desktop Connection to server (codsqlua, IP# 10.5.5.74)
2 Log in to the Windows server 2003 R2 Enterprise AD/ user with DBA privilege
3 Right click database name, go to tasks and take offline.

Miscellaneous CRW Information:

1. Server name is codsqlua\uasql (IP# 10.5.5.74)
2. Connection information for Microsoft SQL Native client
    a. Hostname = codsqlua\uasql
    b. Database = CRW

Database User and Password: AD/Operating system authentication
Connection details TO arcsde layers: change to dbo.DEFAULT

Startup Procedure for Application CRW Systems:

1. Remote Desktop Connection to server (codvappk, IP# 10.5.2.60)
2. Log in to the Windows Server 2008 Enterprise as AD/user with DBA privilege
3. Windows Server Standard 32-bit Operating System
4. Once restored, Verify CRW Systems applications online.
5. Restore Drives C: & E: to complete Applications upgrade or decide what needs to be restored.

To stop or shutdown Application CRW Systems:

1. Remote Desktop Connection to server (codvappk, IP# 10.5.2.60)
2. Log in to the Windows server 2008 Enterprise AD/ user with DBA privilege
3. CRW has no uninstall task.

How to troubleshoot installation and configuration of Autodesk products

You need help troubleshooting the most common problems encountered while installing Autodesk products.

To troubleshoot your Autodesk product, select the link below that relates to the symptoms you are experiencing. You should take note of the activities you perform and their results. This information can be used by Autodesk Product Support if you need their help.

1. Problems installing or deploying the software
2. Problems launching the software (after successful install)
3. Problems with Stand-Alone Licensing or the Portable License Utility (PLU)
4. Problems with Network licensing or SAMReport Lite
5. Problems with configuration

Recommended install and reinstall procedures

To ensure that your AutoCAD®-based product is installed correctly, you want to know more about the recommended uninstall and reinstall procedures.

Whenever possible, it is strongly recommended that you try to repair your installation from the Windows Control Panel before you remove and reinstall your Autodesk software. To perform a repair installation

1. On the Start menu (Windows), click Settings > Control Panel.
2. In Control Panel, double-click Add or Remove Programs (Windows 2000/XP) or Programs and Features (Windows Vista/Windows 7).
3. Select the Autodesk product, and then click Change or Modify.
4. Follow the prompts to repair/reinstall the software.

If a repair/reinstall from the Control Panel does not resolve the problem, you may need to completely remove the Autodesk software, and then reinstall it. The following solutions describe the uninstall process and the clean reinstallation process. It is strongly recommended that you set a system restore point and/or backup critical data before proceeding. If necessary, contact your system administrator or IT professional for assistance backing up the system.

How to remove all Autodesk products from a Windows system

Issue

A previous attempt to install or uninstall an Autodesk® product failed to successfully complete and now you are unable to install or reinstall an Autodesk product on your system.

Solution

In these cases, it is strongly recommended that you clean your system by uninstalling all Autodesk products and supporting applications (add-ins, utilities, enablers, etc.) before attempting to reinstall the software.

1. Before you begin
2. Uninstall peripheral applications
3. Uninstall Autodesk products
4. Delete remaining Autodesk product files and folders
5. Delete remaining Autodesk product entries from the Windows registry
6. Before reinstalling any Autodesk products
7. More Information

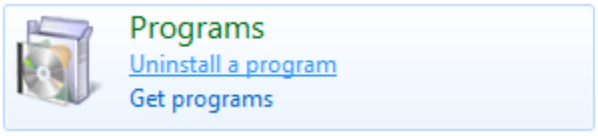
Before you begin

These procedures are intended to completely remove Autodesk products and related support files from your computer including customization files such as menus, AutoLISP, PGP files, etc. If you wish to preserve any existing customization, you must manually back up those files before executing the procedures that follow.

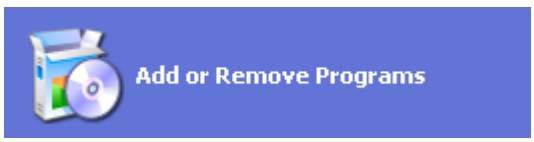
Before you start uninstalling your Autodesk products, we recommend you restart your system to ensure that any pending Windows OS updates get applied first.

For most Windows-based Autodesk products, the process of uninstallation is handled through the Windows Control Panel:

1. From the Windows Start menu, open the Control Panel.
2. Select "Uninstall a program" *(Windows 7/Windows Vista)* or "Add or Remove Programs" *(Windows XP).*

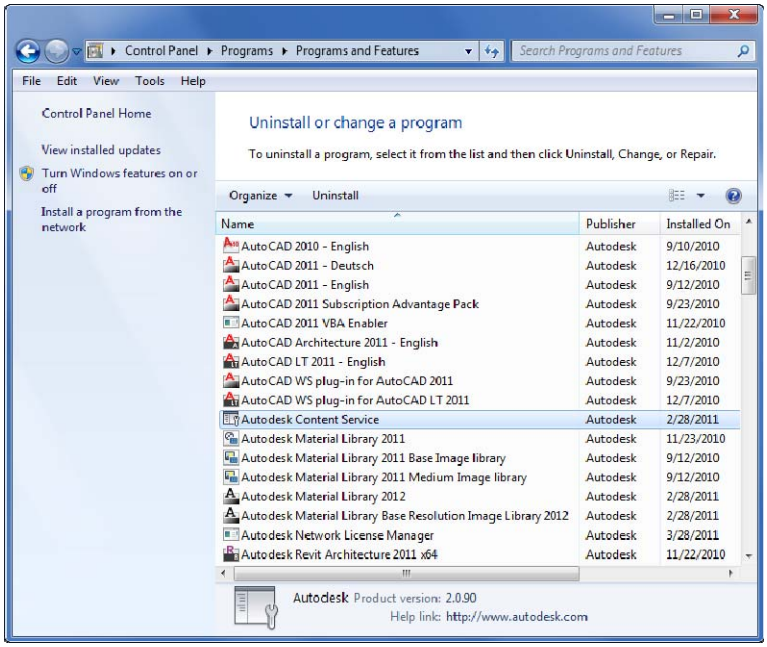


Windows 7 / Window Vista



Windows XP

The first thing to note is that each Autodesk product is listed separately and must be uninstalled separately.



List of installed applications

Even though you may have installed all of the products in a suite in a single installation, each individual Autodesk product and related add-in, enabler, bonus pack, or other supporting application must be uninstalled separately.

Uninstall peripheral applications

If you're going to uninstall a product, you should uninstall the related peripheral applications *before* uninstalling the main application. For example: if you're going to uninstall 3DS Max Design, you should first uninstall the FBX add-in for 3DS Max Design. Uninstall this and any other related add-ins and then uninstall the main applications. This also applies to modules such as the VBA enabler, Subscription Advantage packs, and Autodesk material libraries.

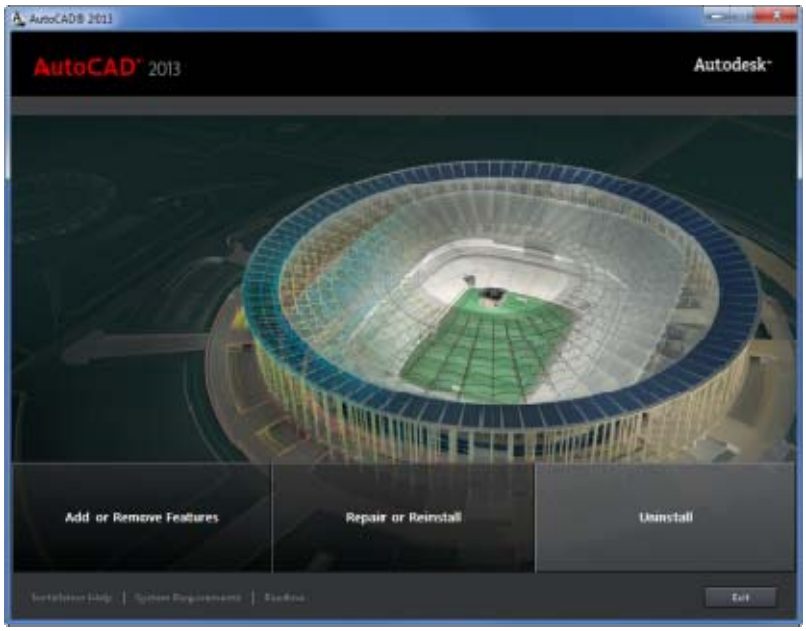
Note: When uninstalling the **Autodesk material library** it's important to remember that these libraries are shared across all Autodesk products and should not be removed unless you are removing all Autodesk products from the system.

When uninstalling the material libraries, it's best to uninstall from largest to smallest. Begin by uninstalling the medium resolution image library–assuming that library is installed on your system–followed by the base resolution image library, and then the Autodesk material library.

Uninstall Autodesk products

Once you have uninstalled all peripheral applications, you can begin uninstalling the main Autodesk products:

1. Select the product to be uninstalled and click the "Uninstall/Change" link *(Windows 7/Windows Vista)* or the "Change/Remove" button *(Windows XP)*.
2. At this point, the Autodesk installer will open in maintenance mode offering you the options to: Add or Remove Features, Repair or Reinstall, or Uninstall the selected product.



AutoCAD 2013 installer in Maintenance Mode

3. Click the Uninstall option and click Next to confirm that you want to remove the product from your computer (if you are prompted to remove shared files, click Yes to All).
4. After the Uninstall is complete, click Finish to close the installer.

Repeat steps 1-3 for each Autodesk product to be uninstalled.

Note: The uninstall procedure for some Autodesk products may require you to restart the computer when the uninstall has completed. If this is the case, restart the computer as instructed, return to the Control Panel and continue removing any remaining Autodesk products.

Delete remaining Autodesk product files and folders

Warning: The following steps instruct you to delete folders at locations that would affect **all** installed Autodesk products. These steps assume you have previously uninstalled all Autodesk products and related peripherals and that it is safe to remove those folders.

1. Using Windows Explorer, locate and delete the installation folder for each Autodesk product that was uninstalled in the previous procedures, e.g., "C:\Program Files\AutoCAD 2010" or "C:\Program Files\Autodesk\AutoCAD 2012".

2. Delete the folder, "C:\Program Files\Common Files\Autodesk Shared"

Note: These locations may be different if your OS is configured to store the Program Files folder on a drive other than C: or if you installed your Autodesk product to another drive and folder name.

3. Delete the following user profile folders (substitute your login name for *%username%*):

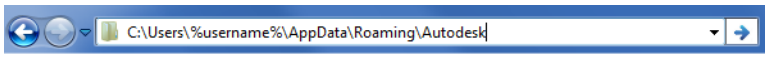
Windows 7/Windows Vista

- C:\Users*%username%*\AppData\Roaming\Autodesk
- C:\Users*%username%*\AppData\Local\Autodesk
- C:\ProgramData\Autodesk

Windows XP

- C:\Documents and Settings*%username%*\ Application Data\Autodesk
- C:\Documents and Settings*%username%*\Local Settings\Application Data\Autodesk
- C:\Documents and Settings\All Users\Application Data\Autodesk

Windows 7 and Windows Vista: Depending on your system settings, Windows Explorer may not automatically display all the subfolders under the Users folder. If you cannot locate these folders by navigating to the folder, copy and paste the above folder locations into the Windows Explorer address bar.



Windows Explorer address bar

Delete remaining Autodesk product entries from the Windows registry

Warning: Improperly editing the Windows registry could render your operating system unusable. Microsoft provides a wealth of critical information that you need to know about the registry in the Microsoft Knowledge Base at http://support.microsoft.com/support.

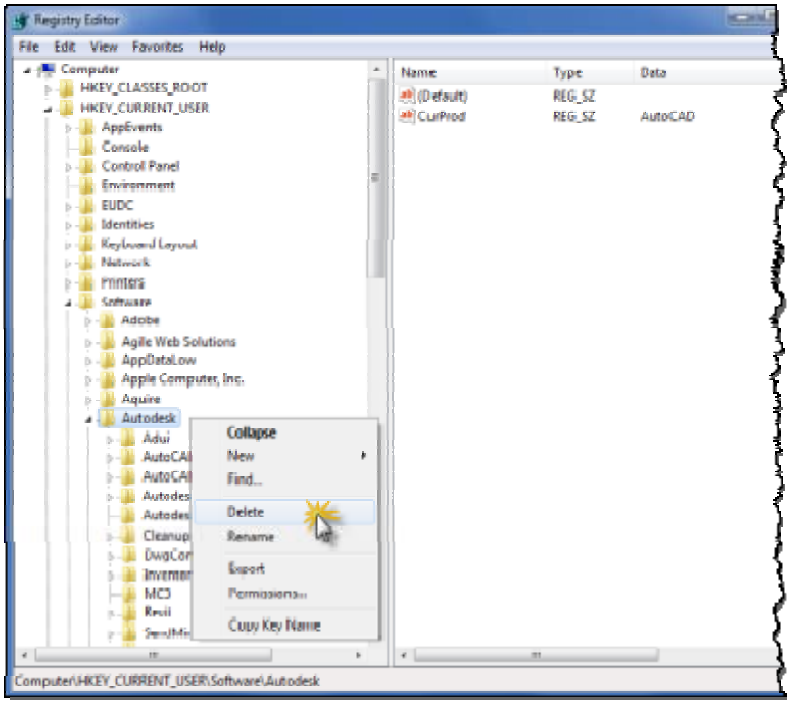
Use the Microsoft® Registry Editor at your own risk and only after backing up the registry. Instructions on backing up your registry can be found in the following Microsoft Knowledge Base articles:

1. Back up the registry in Windows 7
2. Back up the registry in Windows Vista
3. How to back up and restore the registry in Windows XP

Additional information about the registry is available in the Help topics in the Microsoft Registry Editor.

1. Log on to the workstation as a member of the local Administrators group.
2. Launch the Run dialog by typing [Windows key] + R *(Windows 7/Windows Vista)* or clicking Start > Run *(Windows XP)*.
3. In the Run dialog, enter REGEDIT in the “Open” edit field and click OK.
4. In the Registry Editor, locate and delete the following subkeys:

-HKEY_CURRENT_USER\Software\Autodesk
-HKEY_LOCAL_MACHINE\Software\Autodesk



Deleting a subkey in the Registry Editor

1. Close the Registry Editor.
2. Restart the computer.

Before reinstalling any Autodesk products

At this point, each of the previously installed Autodesk products—along with residual files, folders, and registry settings—should now be gone from the system and you are almost ready to start installing (or reinstalling) your Autodesk products. Before you begin, we recommend you perform the following tasks to help ensure a successful installation:

1. Reboot your computer. Restarting your system before installation helps ensure that any pending Windows OS updates get applied *before* you start installing your Autodesk products.
2. In Windows Explorer, delete the contents of your Windows Temp folder, but do not delete the Windows Temp folder itself. You can locate the Temp folder by entering %TEMP% in the Address bar of Windows Explorer.
3. Close all running applications.
4. Disable any virus-checking software running on your system. Virus-checking applications may block certain activities detected as suspicious, e.g., accessing the registry or adding/removing/updating DLL files, even though these activities are common when installing or removing programs. Not only can it slow down the installation process, but it can

actually introduce corruptions. So make sure that your virus checking software is turned off before you install, and make sure you turn it back on when you're complete.

Several anti-virus programs can be disabled by right-clicking its system tray icon and selecting Disable from the shortcut menu (for more information about disabling your anti-virus software, refer to the vendor of that software). In some cases, disabling the anti-virus application from the system tray may not be sufficient and it may be necessary to use the task manager to end the process for the anti-virus software that is still running.

To verify that an anti-virus program is not still running in the background:

1. Press [Ctrl] + [Alt] + [Delete].
2. Click Task Manager.
3. On the Processes tab of the Task Manager, select the process for the anti-virus program and then click “End Process”.

You are now ready to install your Autodesk products on your computer.

Clean installation on Windows® XP or Vista

You want to perform a clean installation of your Autodesk® software on either the Windows® XP or Vista operating system.

A common troubleshooting practice for installation problems is to install the software while in safe mode. However, this approach will not work on Windows XP or Windows Vista, because the installer cannot be loaded while in safe mode.

The best alternative is to use MSCONFIG to restart the system in a state similar to safe mode but with the installer services running. Follow these steps:

Note: By default, MSCONFIG is not installed on Windows 2000, so the following solution will only work on Windows 2000 if you copy the *msconfig.exe* file from a Windows XP computer first.

1. Click Start menu > Run (Windows XP), or Start menu > StartSearch (Windows Vista)
2. Enter **msconfig** and click OK.
3. Select Diagnostics Start Up to turn off most Windows services.
4. Click the Services tab and select the Windows Installer check box.
5. Click OK and restart Windows when prompted.

Note: This procedure does not require that you copy the contents of the CD to the hard disk, because the basic CD drivers will still be loaded in Diagnostic mode. However, you will not be able to access network resources.

To return to normal start up mode:

1. Click Start menu > Run (Windows XP), or Start menu > StartSearch (Windows Vista)
2. Enter **msconfig** and click OK.
3. In the System Configuration dialog box, select Normal Start Up.
4. Click OK and restart Windows when prompted.

Startup Procedure for AutoCAD Users:

1. Remote Desktop Connection to server (codvlicb, IP# 10.5.5.53)
2. Log in to the Windows Server 2003 R2 64-bit as AD/user with DBA privilege
3. Go Start; Select License Manager Tools
4. Select Service/License File. Example ACAD2013, ACAD 2013.1, ArcGIS License Manager and update.

NORTH STAR **Section 3**

System Overview

The Northstar (Harris) (aka PUBS v 6.4) system handles consumer management and reporting functions for DME Customer Service, Metering, Utilities Dispatch, while Solid Waste maintains a separate application for its customers, they occasionally access the application. There exist interfaces between the North Star (Harris) database and the DME Outage Management System database, and the Solid Waste customer database.

Restarting the application and SQL services

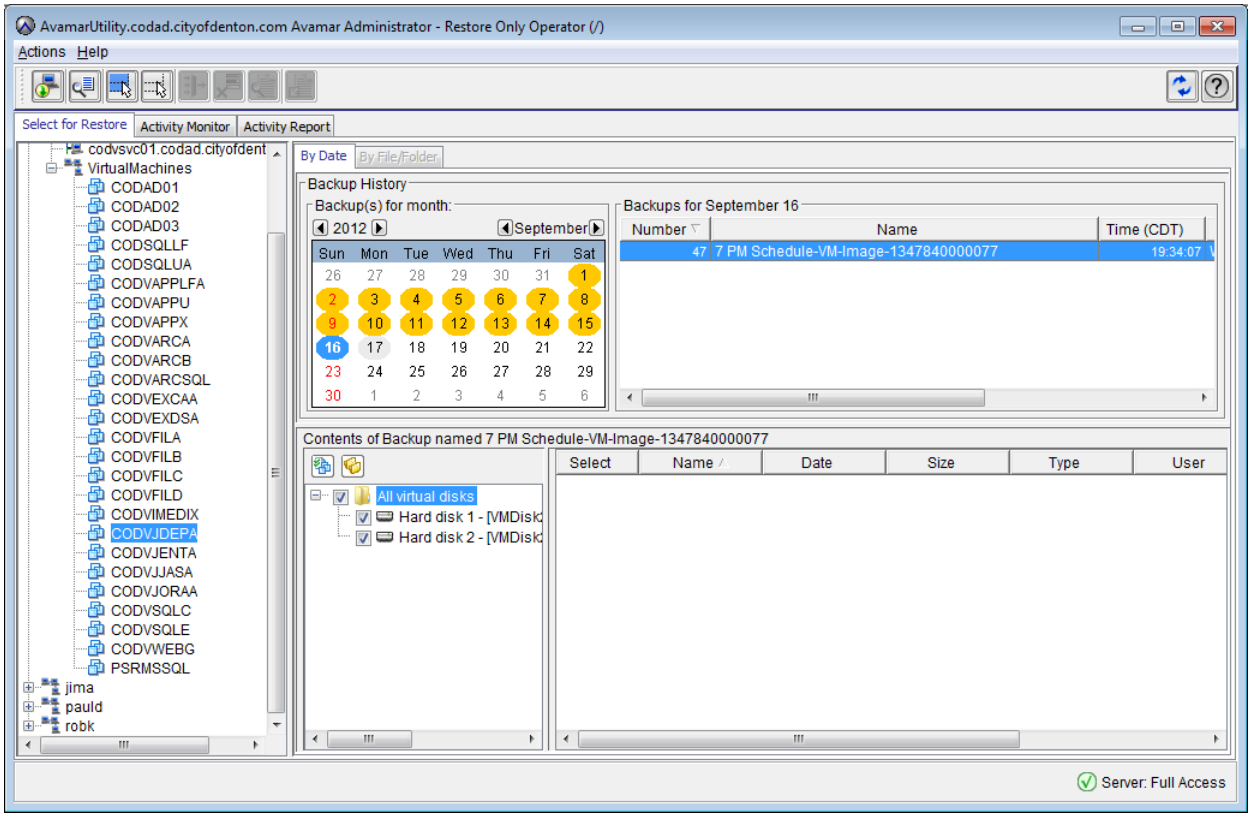
All services are set to start automatically when Windows starts.

Restoring NorthStar Virtual Machines with Avamar Backups

The servers below are NorthStar (Harris) production servers

- HARRISSQLA - SQL SERVER Database Server / Northstar Application Server
- CODVWEBL - Secondary NorthStar Application Server / config. printers and file transfer locations

As Shown below, chose the server you want to restore, the date, check virtual disk, right click and the Restore All Option should appear. (If a database resides on the server, a secondary restore from the client will be needed refer to the Avamar Restore documentation)



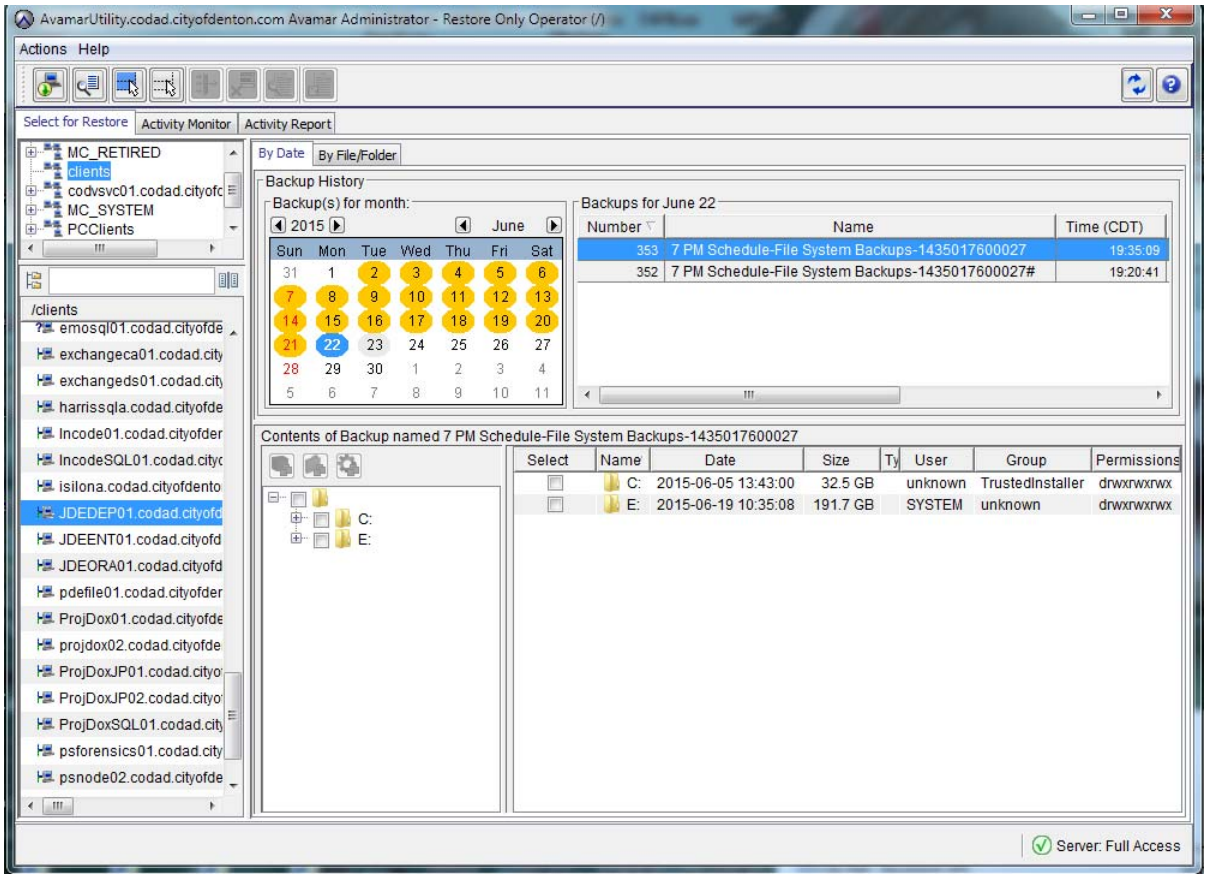
MCUser
J.D. EDWARDS **Section 4**

Restoring JDEdwards Virtual Machines with Avamar Backups

The servers below are JDEdwards production servers

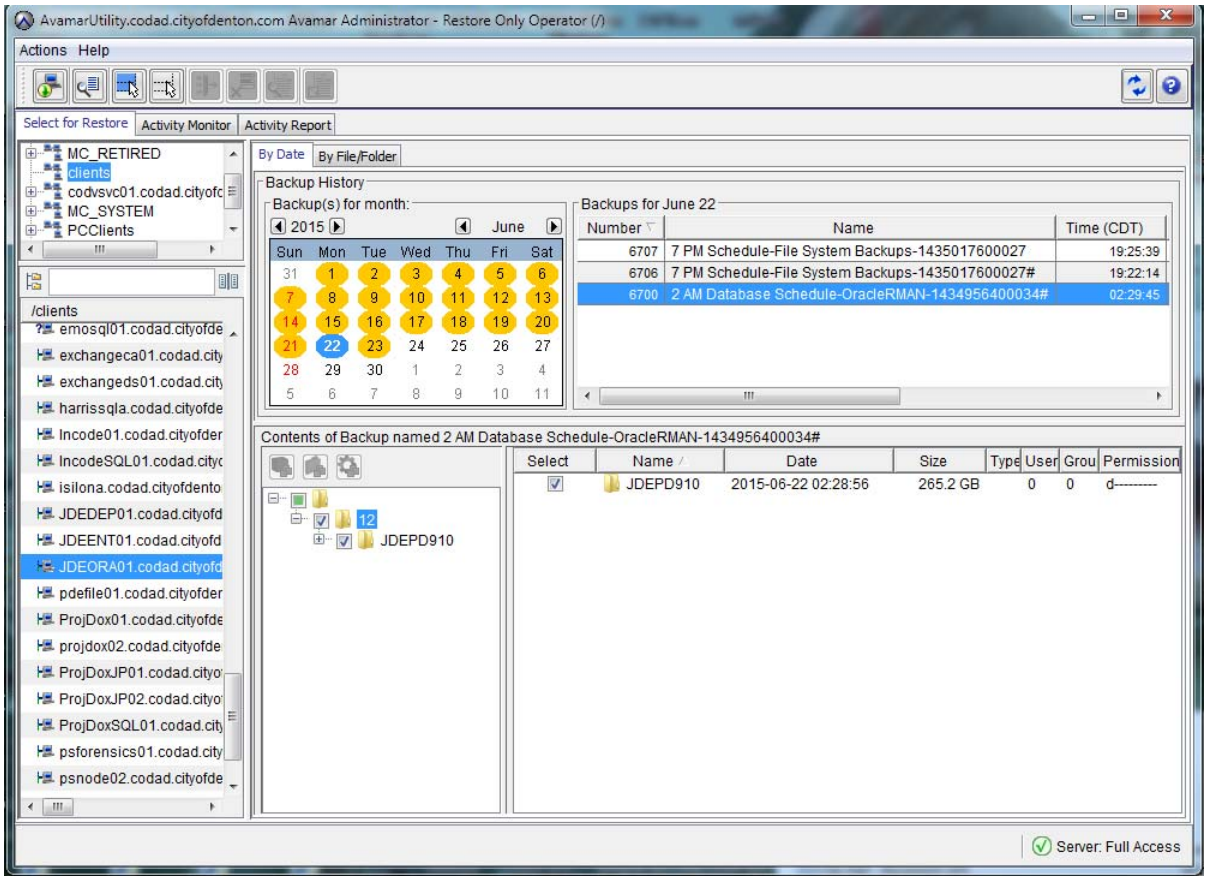
- JDEDEP01 - Deployment Server (Sever Manager and UPK)
- JDEORA01 - Oracle Database Server
- JDEENT01 - Enterprise Server

As Shown below, chose the server you want to restore, the date, check virtual disk, right click and the Restore All Option should appear. (If a database resides on the server, a secondary restore from the client will be needed)



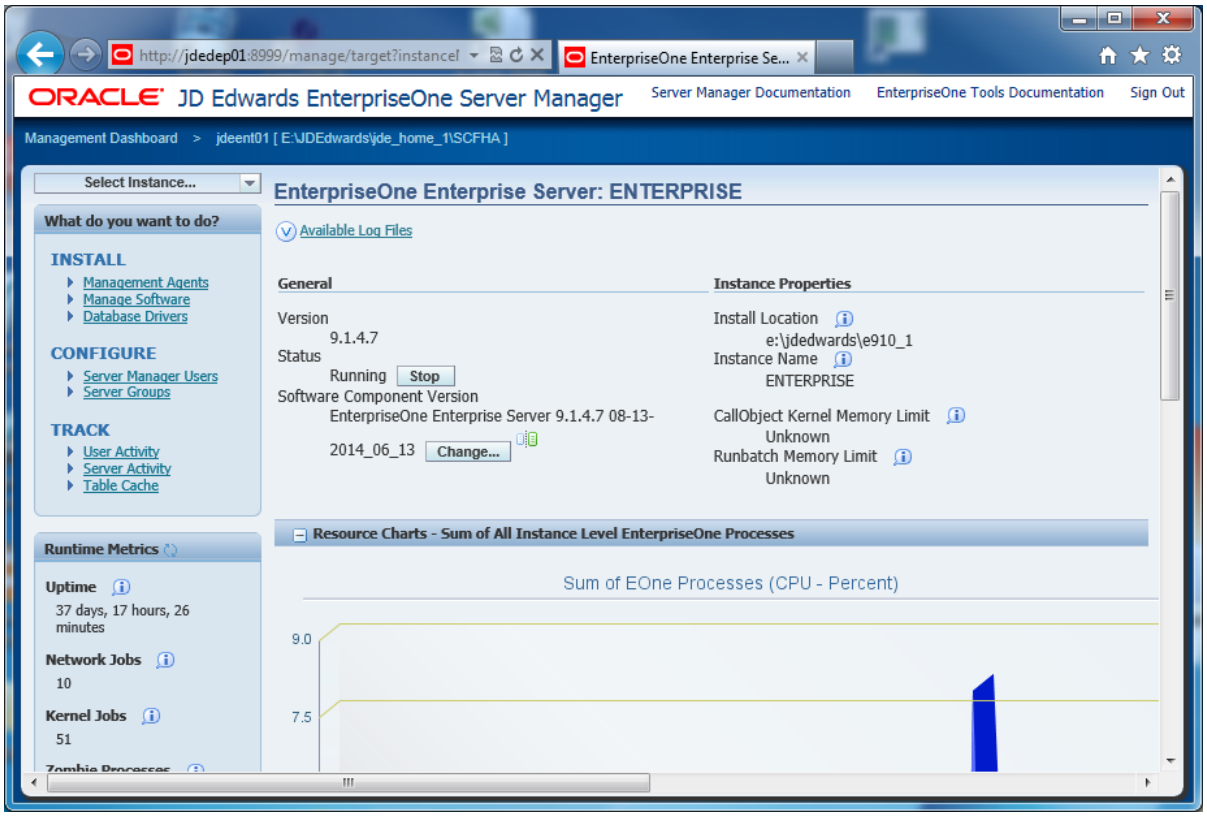
The Avamar Restore for a Client –

The example below is a RMAN restore of the JDEPD910 database. Highlighted is the backup at 2:00 am for the 22th Check the 12g and click the Restore now Option. This will restore the entire database as of 2:00am on the 22th.

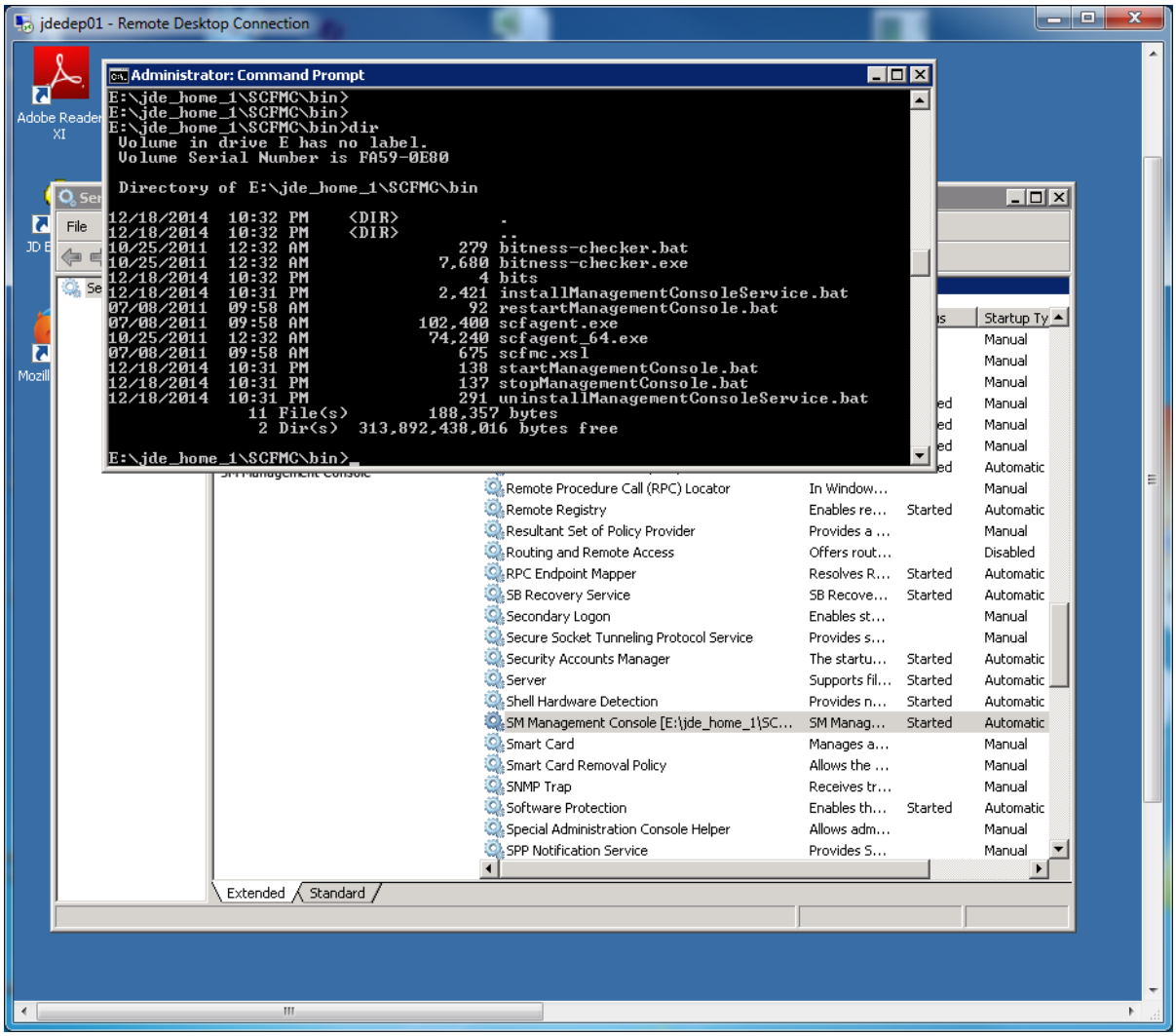


After the databases are up and running the services will need to be started from within Server manager. http://jdedep01:8999/manage/home

Click on the managed Instance ENTERPRISE and under General you will be able to START/STOP the instance. After ENTERPRISE T has been started you will need to start PDHTMLOAM. This is the Production HTML.



JDEDEP01 - Everything should startup fine
To start Server Manager if necessary.



What to do if other JDE servers are restored or rebooted

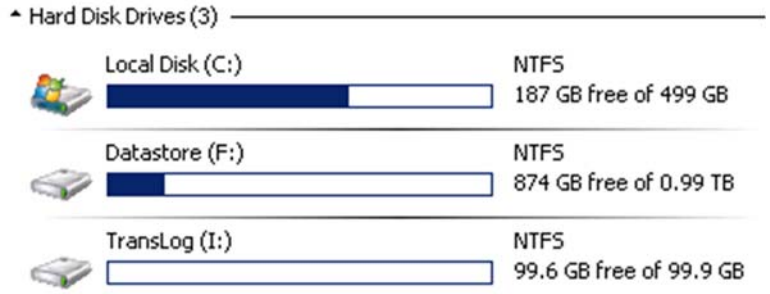
JDEENT01 - Enterprise Serve
Stop and restart Managed instances ENTERPRISE and JPD910 from Server Manager

JDEJAS01 - Web Server
*Stop and restart Managed instance PDHTMLOAM from Server Manager***.**

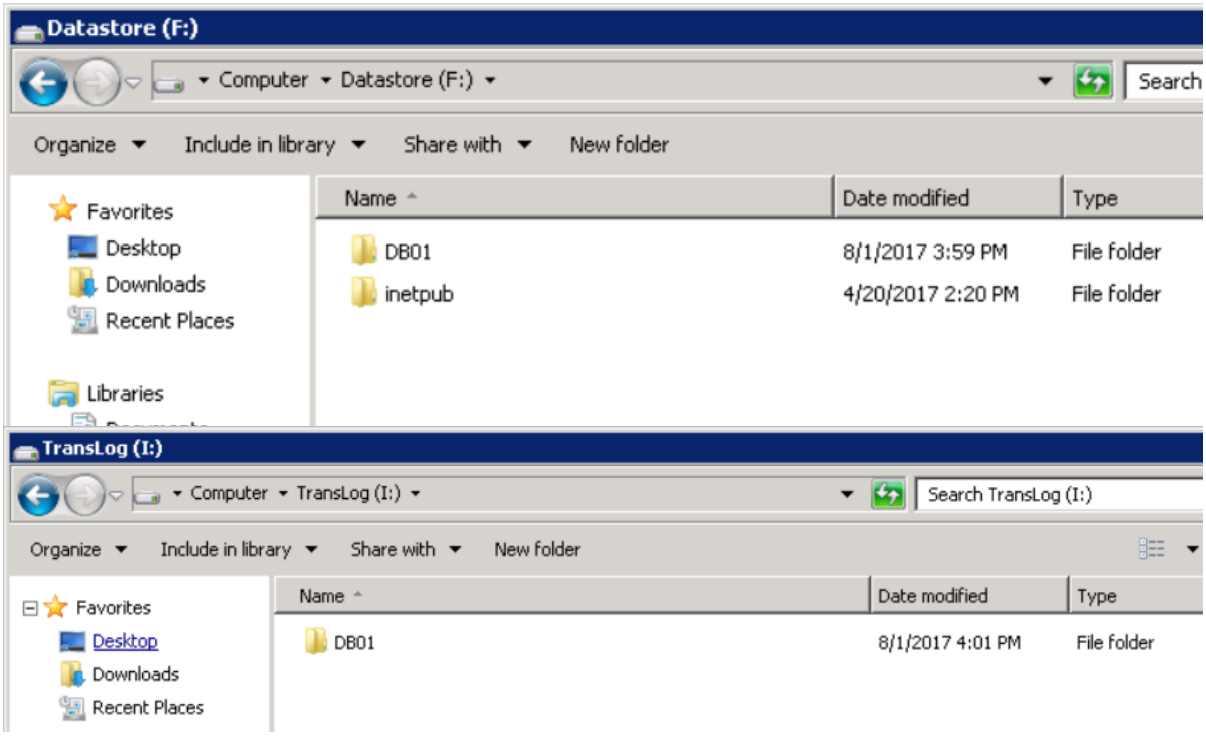
MICROSOFT EXCHANGE Section 5

This BCP document will address the On-Premise installation of Microsoft Exchange Server that is currently configure in a Hybrid Mode with Exchange Online in the City of Denton Office 365 tenant.
The On-Premise installation of Exchange consists of two virtualized windows servers, one running the Client Access instance and the other running the Mailbox Server instance, currently identified as EXCHANGEDS01 and EXCHANGECA01. Normal recovery procedures should be followed to retrieve image only backups for the two VMs, then perform Exchange database recovery into restored VMs. These servers are configured and running in a VMWare environment, and as such should be reconfigured in this environment. See VM server recovery documentation in this BCP for procedures.
Exchange data is currently backed up using VEEAM If the VM must be rebuilt, use the following disk configuration below. As of this document, all Disks are virtual disks within a vSphere datastore or datastores of appropriate size. Current disks within the Mailbox Server are as follows:

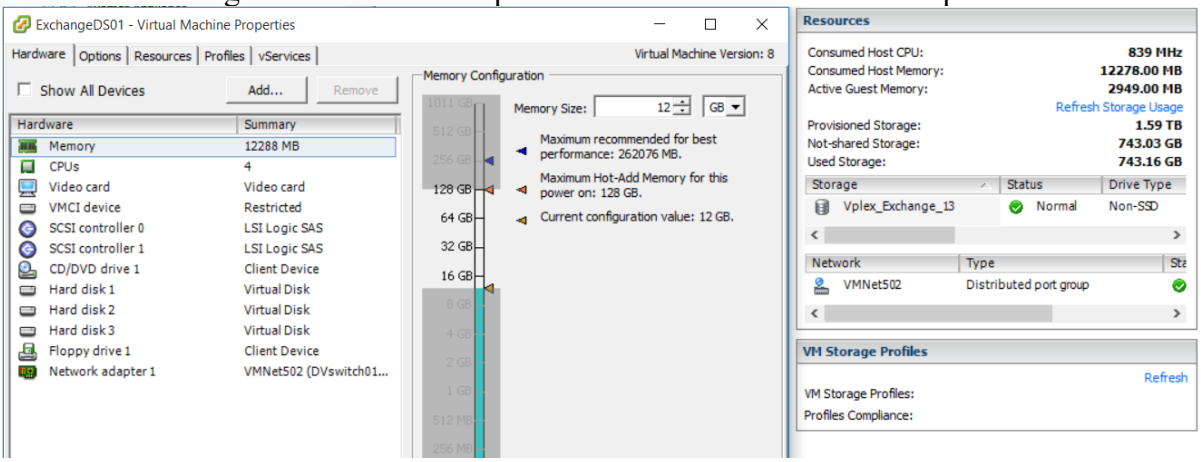
Regular backups are made of the operating systems of both Exchange servers and can be restored to the servers themselves. The following screenshots will provide physical connectivity information necessary to re-connect appropriate drive letters to the affected servers.



The current storage databases and corresponding log files are configured and established in the following drives.



The current configuration of VM disk placement are as follows within vSphere:



VMWARE ESX 5.X Section 6

CLUSTER REQUIREMENTS

- SQL Server with Virtual Center database
- ESX 5.X installation media, vCenter 5.X installation media (downloadable from VMware.com)
- Fiber Channel HBAs and Fiber Channel cabling for SAN connectivity
- Fiber Channel switches for multiple server connectivity to SAN
- Backup media containing backups of any virtual machines needing restoration

OTHER REQUIREMENTS AND CONSIDERATIONS

HBA connectivity must be performed by a technical resource that understands SANs and how to connect servers with them over fiber channel. They must understand how to perform Zoning. It is best practice that Zoning be created in such a way that individual ESX server communication with the SAN does not mingle with another ESX server.

Implementation with a SAN is not required in situations of extreme disaster recovery do not provide for a SAN and cluster environment. Individual ESX servers can be installed using the same methodology in this documentation, using local storage instead. Once a SAN and cluster can be implemented, moving the Virtual Servers is fairly easy once a more permanent running state can be achieved.

This documentation will show multiple Ethernet network connections are utilized to allow for best performing bandwidth. This is also not a requirement. One Ethernet connection per ESX server is all that is required to recreate the configuration shown further in the document. As most servers come with 2 connections, it is best to use 1 connection for the service console of the ESX server, and the other connection for virtual server communications in a time of disaster recovery.

NOTE **ESX Server 5.X Installation Guide can be located on CD in the Vault at Fire Station 7 or at www.vmware.com**

THE FOLLOWING PAGES IN THE GUIDES LISTED ARE MOST PERTINENT FOR INSTALLATION OF ESX SERVER, VCENTER SERVER, AND LICENSING SERVICES.

VSPHERE 5.X INSTALLATION GUIDE – PAGE5 50 AND 60 INSTALLING A LICENSE SERVER

- Page 60 describes how to install the license server. For simplicity, the License Server is commonly placed on the same server as the vCenter services. Ours is currently deployed that way.
- Page 50 describes the centralized licensing scheme that we employ to license our systems. Our Enterprise license file makes all functionality available for ESX in a clustered environment, and can be obtained from VMware, or from the tape backup for VCENTER01, the virtual center server. NOTE: vCenter must be installed to follow this portion.

VSPHERE 5.X INSTALLATION GUIDE – PAGE 65 - 80 FOR MANAGEMENT SOFTWARE INCLUDING VCENTER (TO BE INSTALLED ON SQL SERVER DATABASE)

- The pages 65 through 80 describe the management software installations, including vCenter (or Virtual Center) that manages the ESX hosts and must exist before page 50 can be followed with licensing.
- Our existing VirtualCenter database in SQL Server 2012 can be utilized to ease deployment, however a new one can also be created from scratch and server and resource information can be recreated from this documentation. The database should be obtainable from backups of the VCENTERDB01 instance for SQL Server 2012 at the time of this writing.
- It is recommended to install all management components, EXCEPT Microsoft SQL Server Express, unless a SQL Server is not readily available during an extreme disaster recovery period.
- Optionally, during an extreme disaster recovery period, if few servers are available, installing vCenter as a virtual machine in the VMware environment is a viable option as listed on page 78. NOTE: IF THIS IS DONE, YOU MUST PERFORM ESX SERVER INSTALLATION LISTED LATER IN THIS DOCUMENT FIRST!

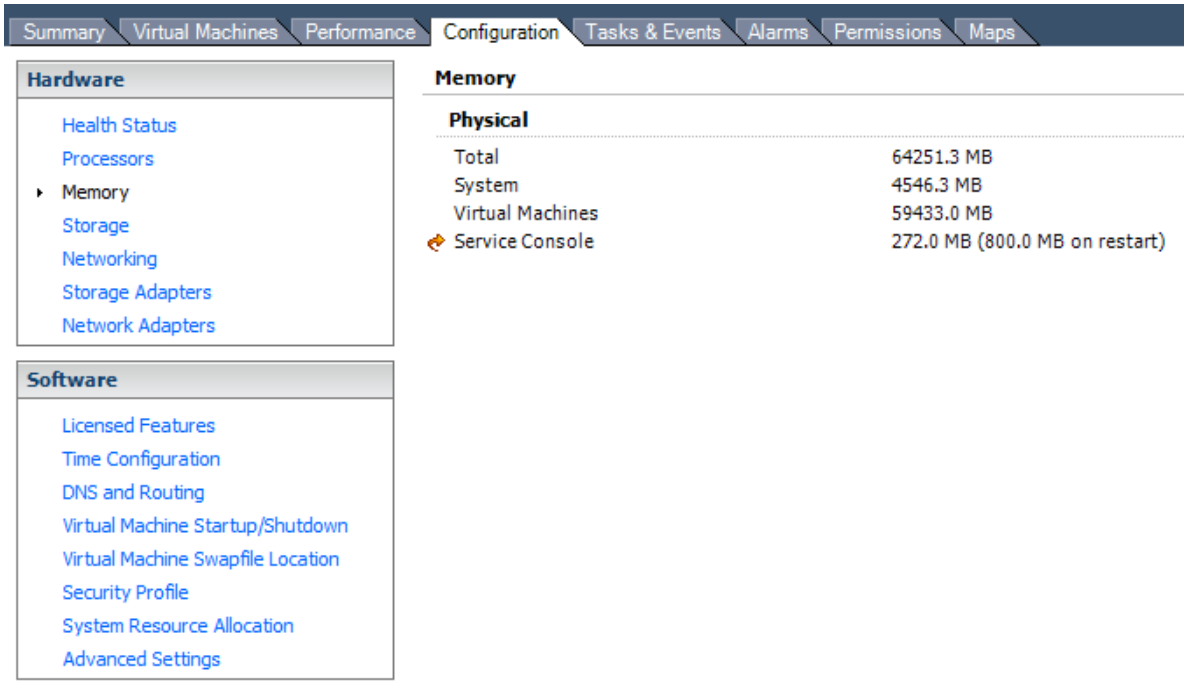
VSPHERE 5 INSTALLATION GUIDE – PAGE 81 – 92 FOR INSTALLING VMWARE ESX SERVER

- If connecting with HBAs to a SAN for cluster capability, install ESX Server on Host servers before connecting HBAs and zoning them to the SAN.
- During installation, perform Advanced Partitioning using the following information to set the desired partition sizes.

ESX Partitioning	
/	8192Mb
/boot	1024Mb
swap	1600Mb
vmcore	110Mb
/home	2048Mb
/tmp	2048Mb
/tools	5120Mb
/var	4096Mb
/var/log	4096Mb
/vmfs	244G b

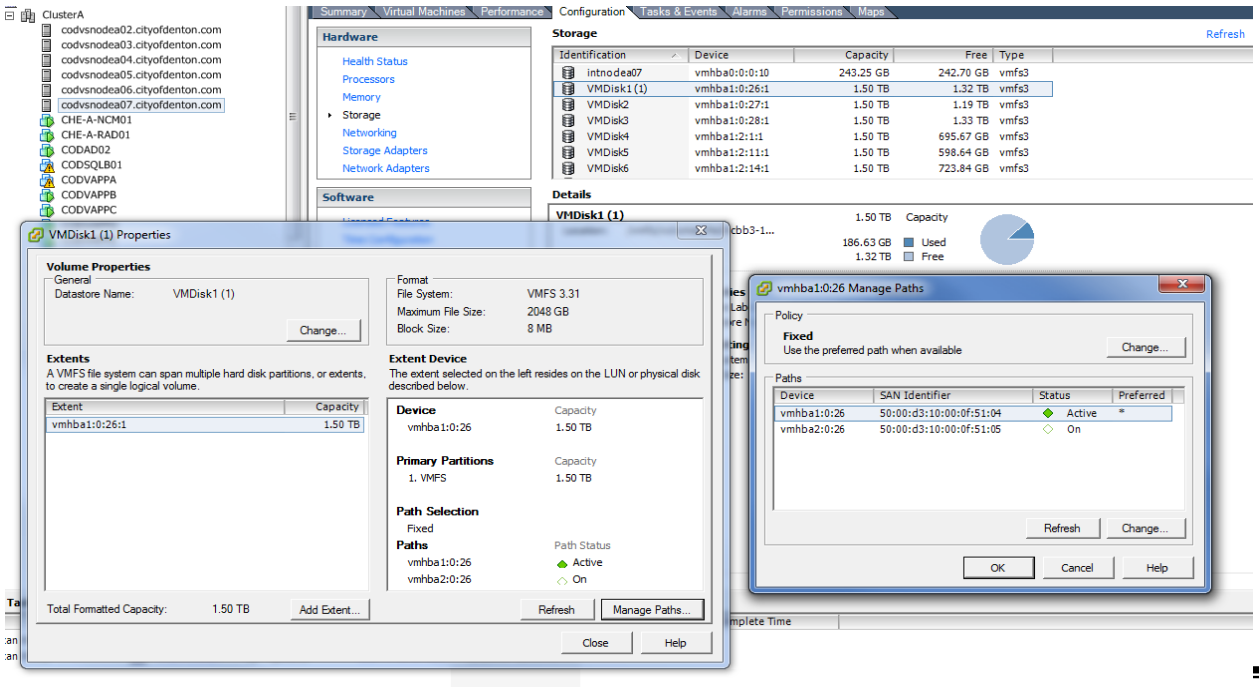
THE FOLLOWING SCREENSHOTS ARE PROVIDED FOR REFERENCE FOR HOST SERVER CONFIGURATION.

- **NOTE:** These configurations are for cluster configuration in our optimized environment. Some settings can be varied based on current available equipment and connectivity, most notably the storage and network configurations



Service Console should be set to 800MB for optimum performance. This can be set in the tab shown.

If a LUN from a SAN is presented to the ESX host, then it will show up as shown. It is good practice to edit the properties of the VMFS disk, manage the path, and make sure it is set to Round Robin (vmware).

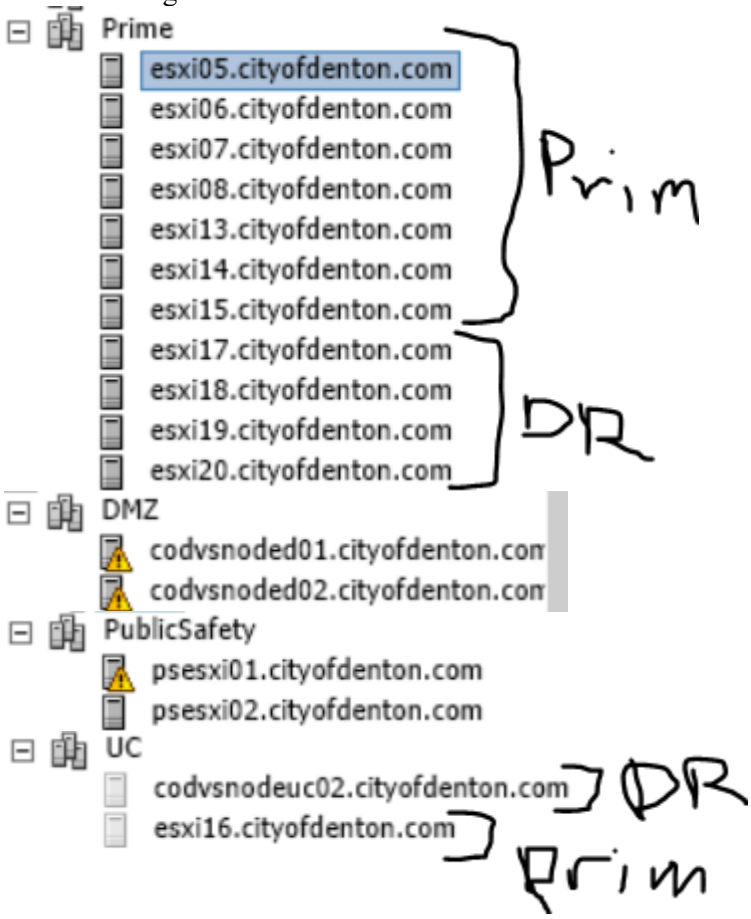


Distributed Network Switch Configuration:

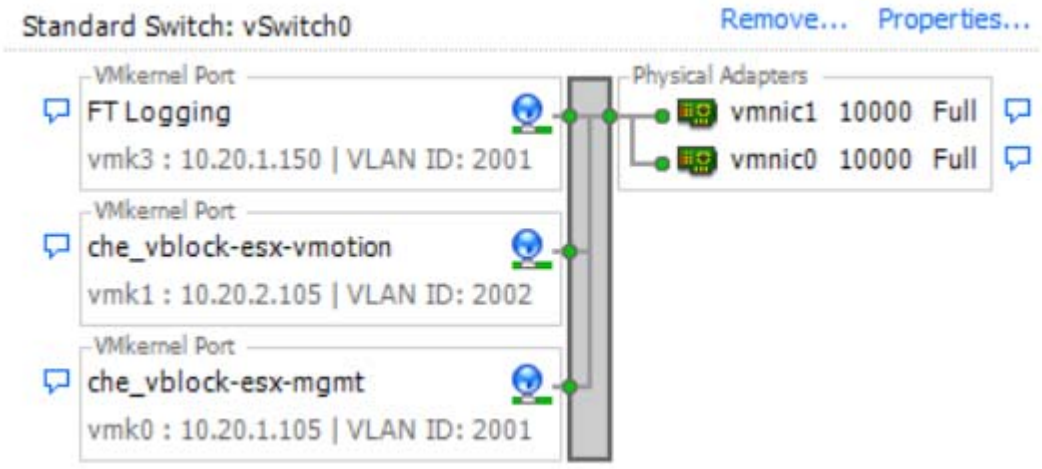
Name, Port binding, VLAN ID, Number of VMs, Num

Name	Port binding	VLAN ID	Number of VMs	Number of ports	Alarm actions
CorinthNet2701	Static binding	VLAN access : 2701	7	8	Enabled
VMNet501	Static binding	VLAN access : 501	24	31	Enabled
VMNet2061	Static binding	VLAN access : 2061	3	128	Enabled
VMNet2064	Static binding	VLAN access : 2064	0	128	Enabled
VMNet2052	Static binding	VLAN access : 2052	1	128	Enabled
VMNet2053	Static binding	VLAN access : 2053	0	128	Enabled
VMNet1896	Static binding	VLAN access : 1896	0	500	Enabled
VMNet2051	Static binding	VLAN access : 2051	1	128	Enabled
VMNet1800	Static binding	VLAN access : 1800	5	500	Enabled
VMNet2055	Static binding	VLAN access : 2055	0	128	Enabled
VMNet2054	Static binding	VLAN access : 2054	0	128	Enabled
VMNet255	Static binding	VLAN access : 255	0	8	Enabled
VMNet2057	Static binding	VLAN access : 2057	5	128	Enabled
VMNet252	Static binding	VLAN access : 252	2	8	Enabled
VMNet2056	Static binding	VLAN access : 2056	6	128	Enabled
VMNet250	Static binding	VLAN access : 250	2	8	Enabled
VMNet2059	Static binding	VLAN access : 2059	0	128	Enabled
VMNet195	Static binding	VLAN access : 195	4	8	Enabled
VMNet2058	Static binding	VLAN access : 2058	0	128	Enabled
VMNet101	Static binding	VLAN access : 101	2	8	Enabled
VMNet15	Static binding	VLAN access : 15	2	8	Enabled
VMNet2060	Static binding	VLAN access : 2060	0	128	Enabled
VMNet3	Static binding	VLAN access : 3	0	8	Enabled
VMNet2	Static binding	VLAN access : 2	0	8	Enabled
DVswitch01-A-DVUplin...	Static binding	VLAN Trunk : 0-4094	0	26	Enabled
VMNet507	Static binding	VLAN access : 507	0	8	Enabled
VMNet508	Static binding	VLAN access : 508	1	8	Enabled
VMNet505	Static binding	VLAN access : 505	39	44	Enabled
VMNet506	Static binding	VLAN access : 506	64	70	Enabled
VMNet2050	Static binding	VLAN access : 2050	0	128	Enabled
VMNet504	Static binding	VLAN access : 504	57	71	Enabled
VMNet502	Static binding	VLAN access : 502	41	47	Enabled
VMNet2062	Static binding	VLAN access : 2062	1	128	Enabled
VMNet503	Static binding	VLAN access : 503	33	39	Enabled
VMNet2063	Static binding	VLAN access : 2063	0	128	Enabled
ZoomDPG	Static binding	VLAN access : 2699	1	2	Enabled
VMNet500	Static binding	VLAN access : 500	23	36	Enabled

Cluster Configuration:

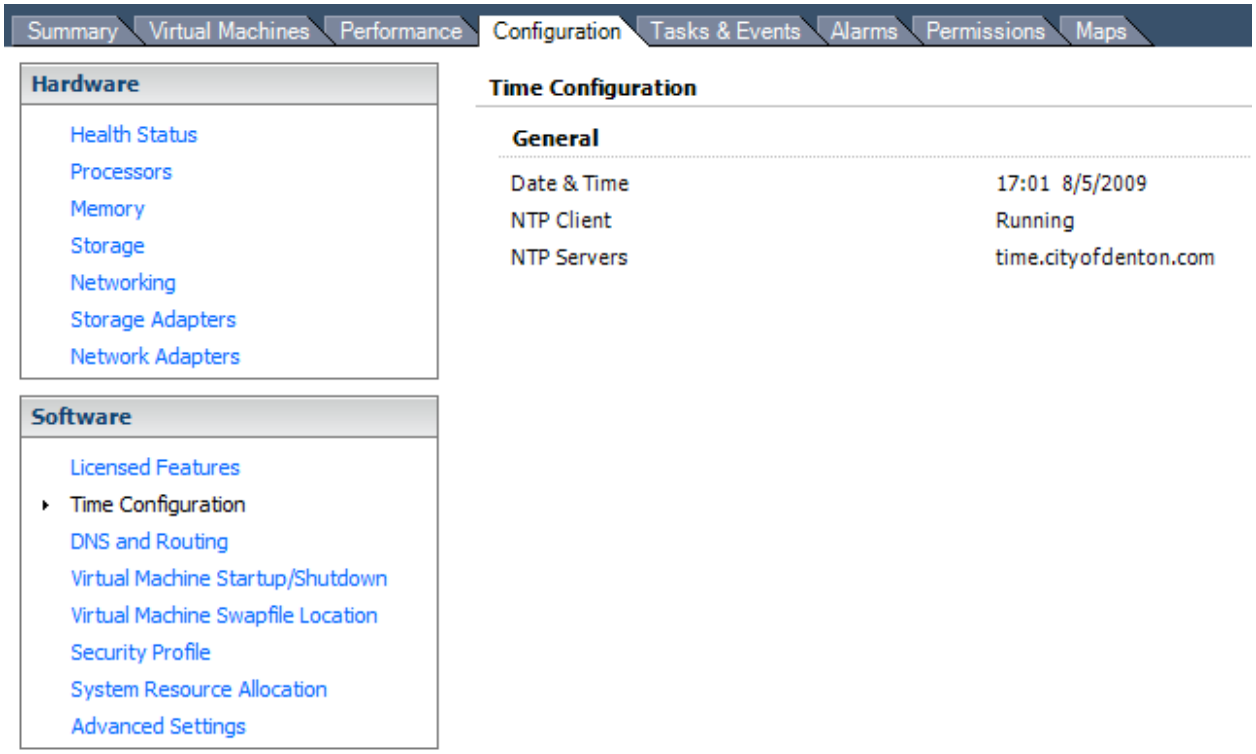


Primary Cluster Management Network Configuration:



Current NIC configuration shows the Service Console on the primary NIC, and then the VMotion connection set on the secondary NIC. A Third NIC is installed with the switch set to use load balancing based on IP hashing. This must be implemented with Port Channeling on the physical network switch as well if this is to be used. VLAN tagging is also configured on the network switch, and each virtual machine network is configured with a VLAN ID (Optional) so ESX will tag the packets intended for the proper VLAN.

If circumstances dictate fewer NICs are available, and minimal network switching capability is available, then switches listed can be configured with one NIC connection, and no VLAN tagging would be set. The caveat is the connection can only use one subnet and the servers must have their IPs set according to the subnet being connected to.



Time configuration for ESX hosts. This is very important for VMotion to function properly in the cluster if it will be utilized. It must be set and match on all hosts in the cluster so time matches exactly.

The rest of the configuration items for ESX hosts should essentially be defaults. Once an ESX Host is installed and set up, whether it's in a cluster or not, can start creating virtual machines. Once the

virtual machines are created, follow normal Windows installation and server restore procedures using your client resources to connect to the virtual machine using the VI client shown in the various configuration screenshots.

Veeam Backup & Replication 9.5 allows you to quickly restore entire virtual machines and specific VM files from backups or restore individual VM guest OS files and folders from backups and replicas that have been successfully created.

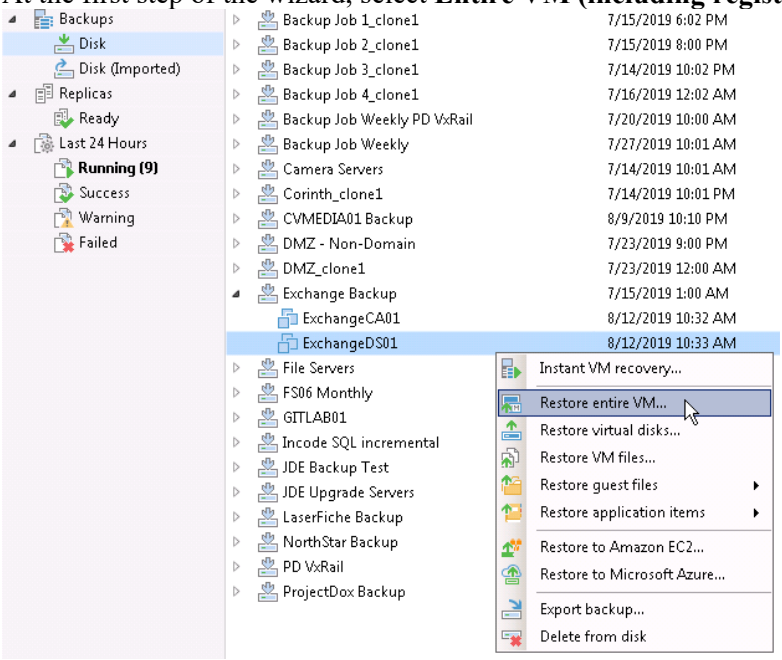
NOTE:
For VM guest OS file restoring, Veeam Backup & Replication 9.5 supports FAT and NTFS guest file systems.

Restoring Virtual Machines from Backups
With the **Restore** wizard, you can restore the entire VM and start it on the target host if necessary. This section will guide you through all steps of the wizard and provide explanation on the offered options.

Step 1. Launch the Restore Wizard
In the **Home** tab, click the **Restore** button on the toolbar.

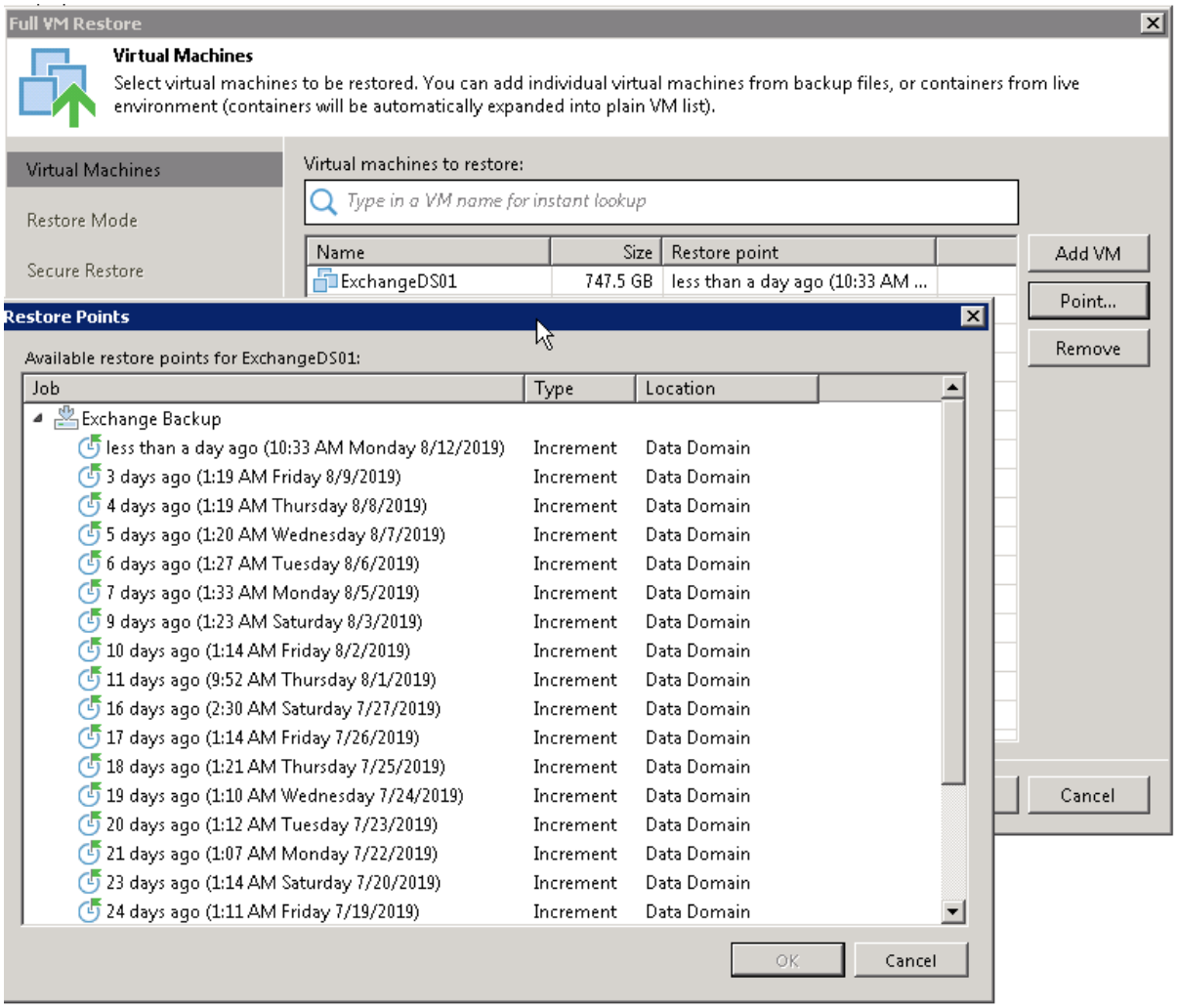
You can also, from the management tree on the left side, branch open **Backups** then click **Disk.** Right–click a necessary VM in the corresponding backup job and select **Restore entire VM...**. In this case, you will pass to the step 4 of the wizard.

Step 2. Select a Task
At the first step of the wizard, select **Entire VM (including registration)**.



Step 3. Select the Restore Point

Select the **VM** and click **Point..** to select the point of restore for the virtual machine. You may do this for all VM's on the list, then click **Next.**

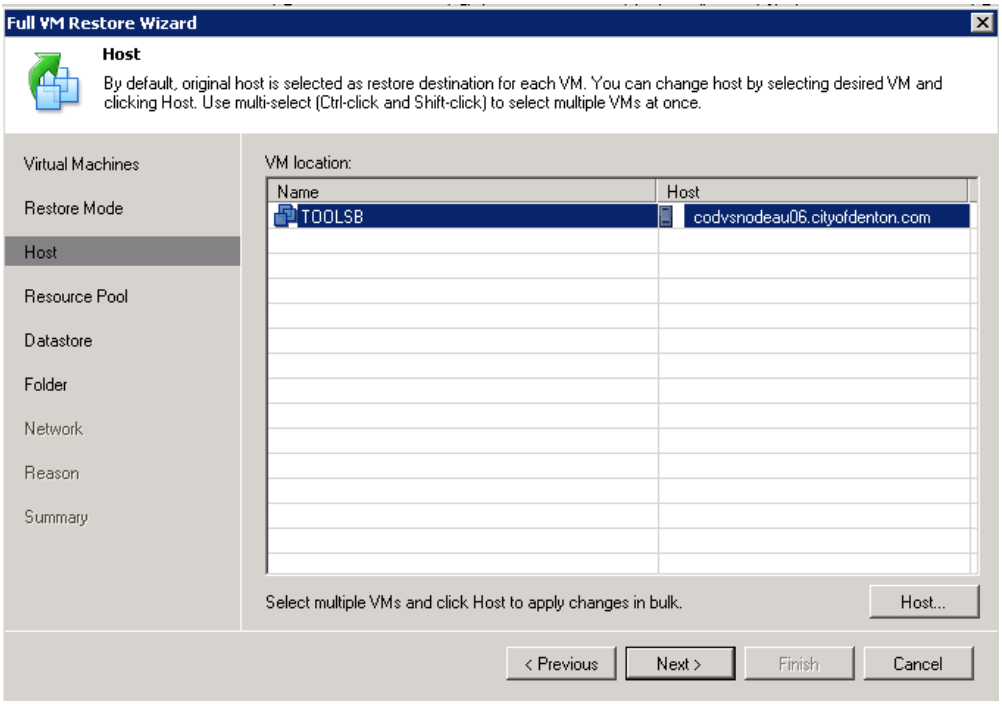


Step 4. Select Destination for Restored VM

Select **Restore to the original location** if it is possible. If not, select **Restore to a new location, or with different settings**.

If **Restore to the original location** is selected go to **Step 5**.

Proceed to select the **Resource Pool**, **Datastore**, **Folder**, and **Network** for the VM being restored.



Step 5: Reason
Enter detailed information as to the reason for the restoring of the VM for later tracking if needed.

Step 6. Finish Working with the Wizard
Click **Next**, then **Finish** to finish working with the wizard.

Restoring VM Files: VMX, VMDK

The **Restore** wizard allows you to restore specific VM files —. vmdk, .vmx, .vmsd, vmsn, .nvram, log files and so on. This section will guide you through all steps of the wizard and provide explanation on the offered options.

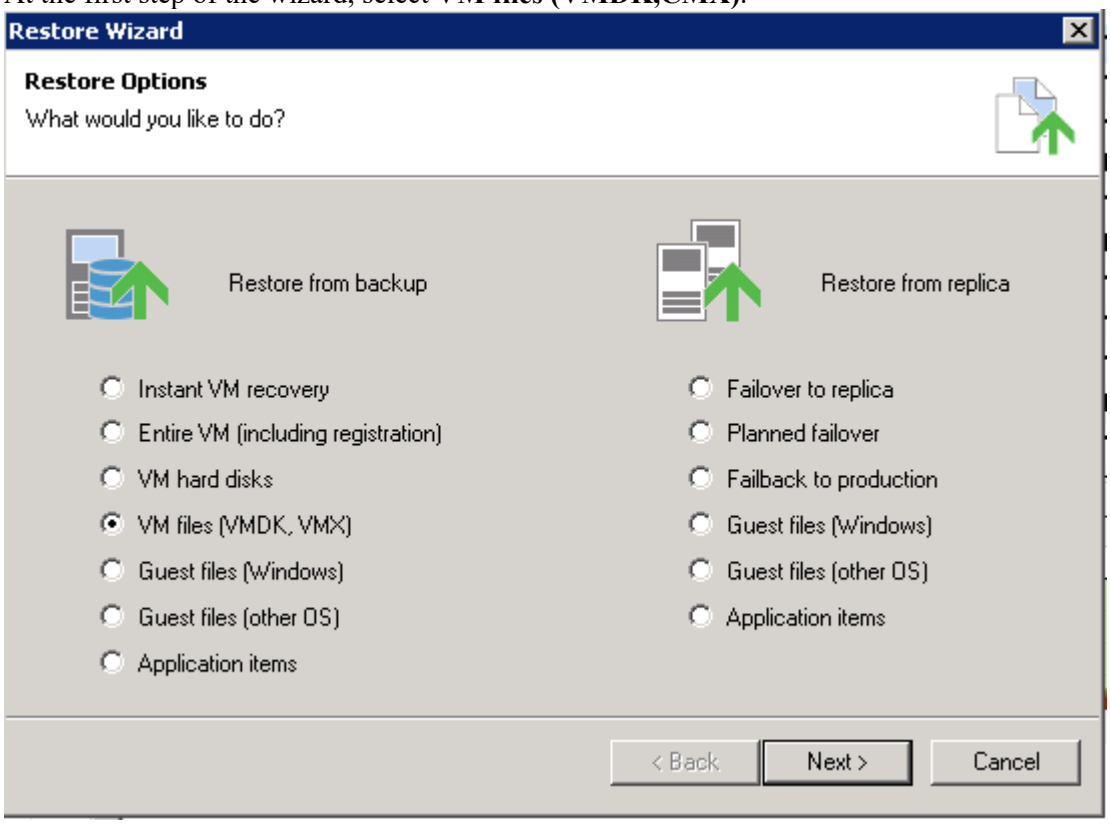
Step 1. Launch the Restore Wizard

To launch the **Restore** wizard, in the **Home** tab, click the **Restore** button on the toolbar.

You can also, from the management tree on the left side, branch open **Backups** then click **Disk.** Right–click a necessary VM in the corresponding backup job and select **Restore VM files...**. In this case, you will pass to the step 4 of the wizard.

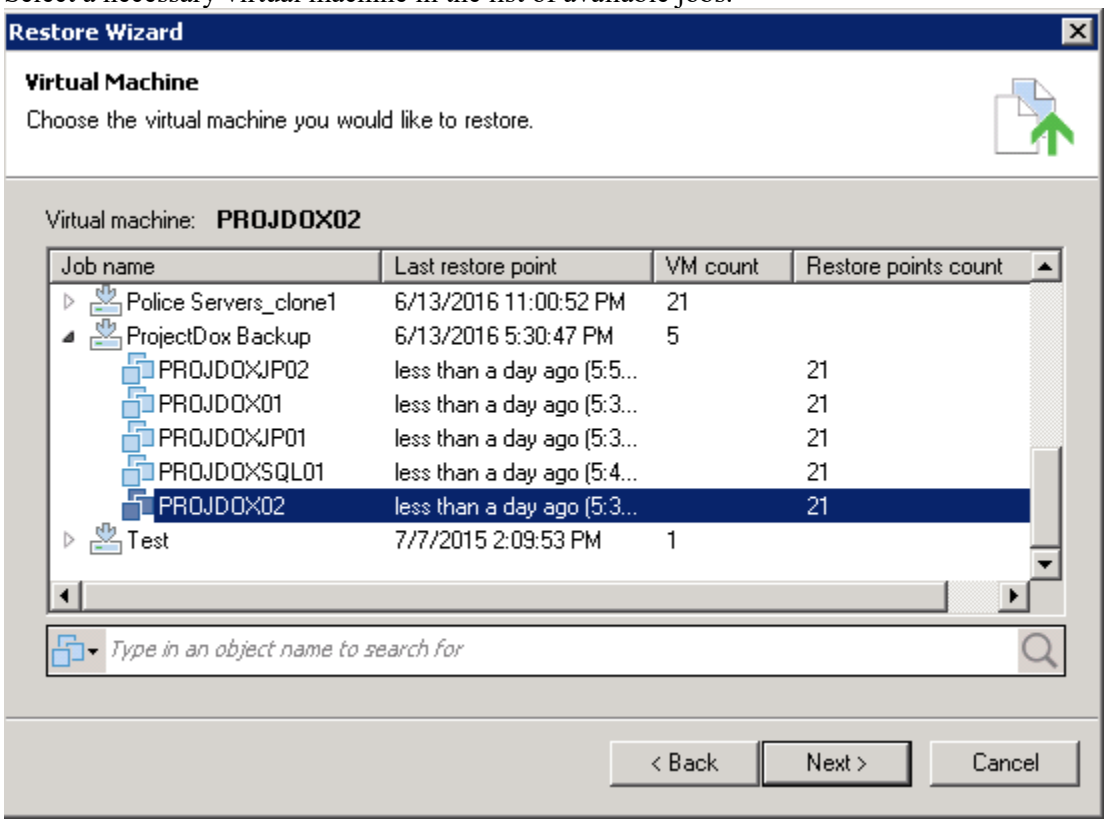
Step 2. Select a Task

At the first step of the wizard, select **VM files (VMDK,CMX)**.



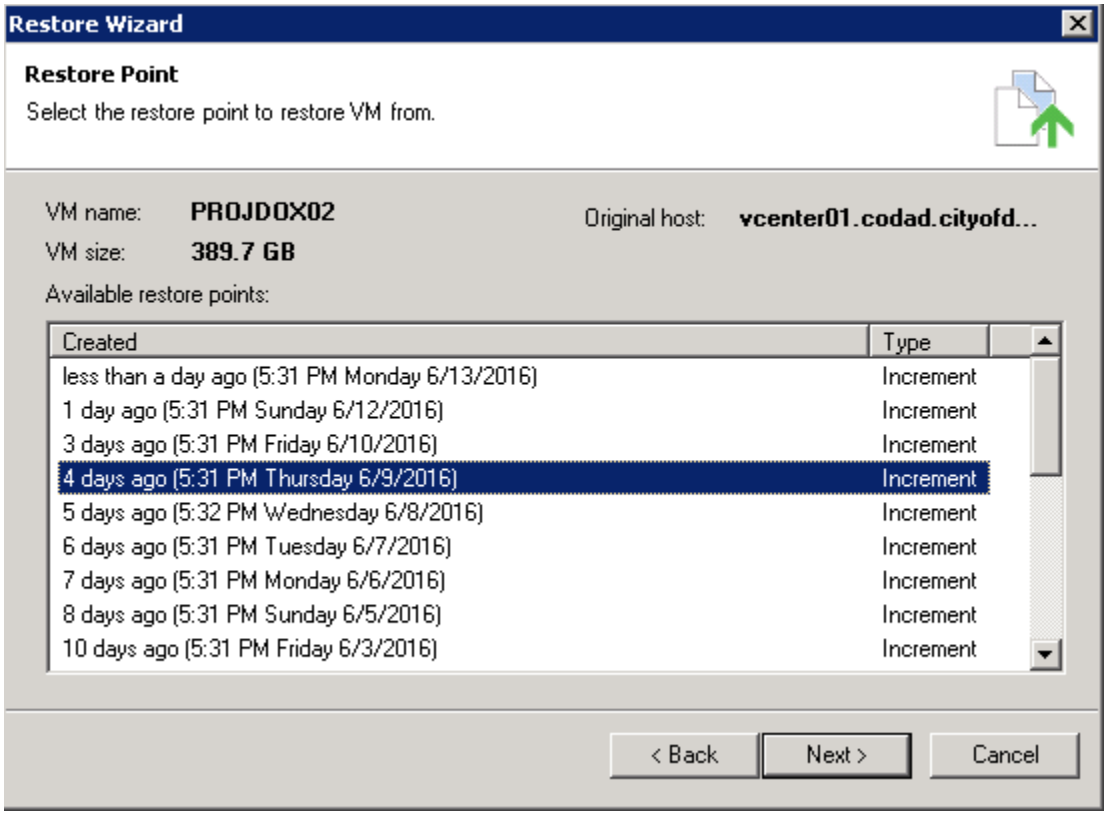
Step 3. Select a Virtual Machine

Select a necessary virtual machine in the list of available jobs.



Step 4. Select the Restore Point

Select a necessary restore point for the virtual machine

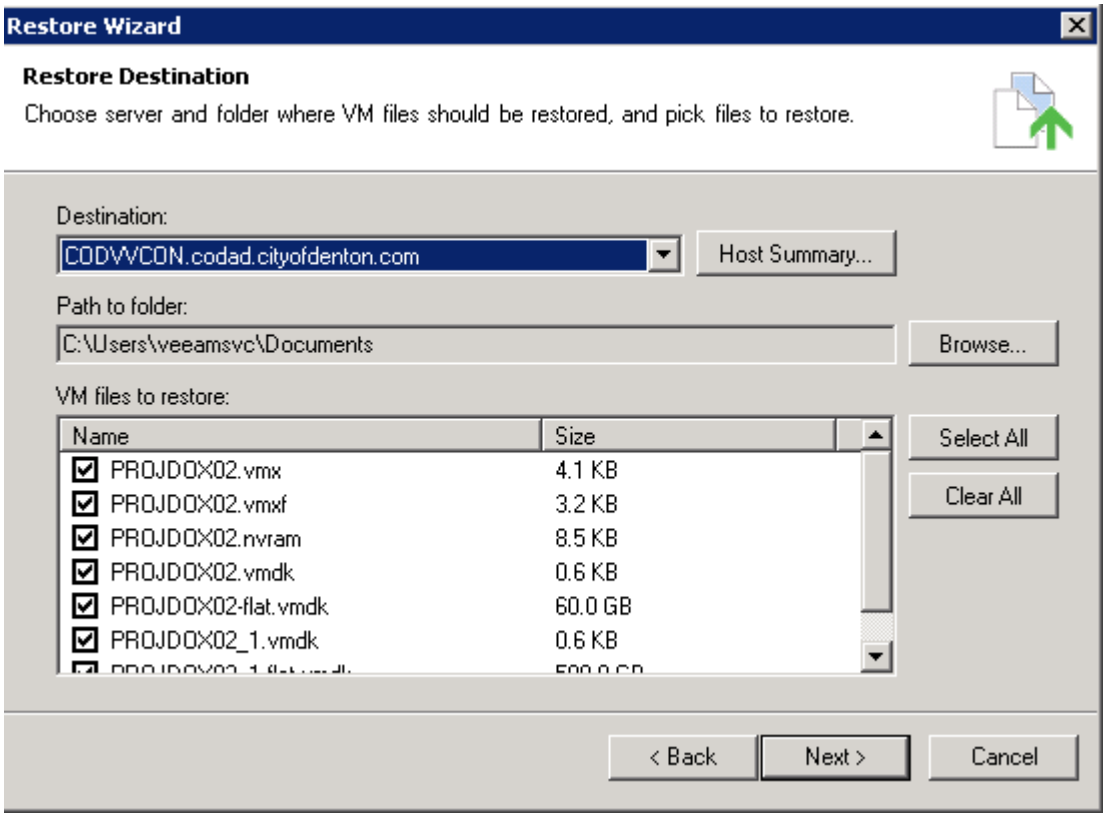


Step 5. Select VM Files and Destination

At this step of the wizard, you should select the VM files you want to restore and the destination where the restored files should be stored. From the **Destination** list, select where to store VM files: to an ESX host or the local machine. Use the **Host summary…** button to view information on storage resources.

In the **Path to folder** field, specify the path to the folder on the selected host where files should be restored.

In the **VM files to restore** section, select check boxes next to files that should be restored. By default, all VM files are selected.



Step 6. Reason
Enter a detailed reason for the restore of the files.

Step 7. Finish working with the Wizard

Click **Next**, then click **Finish** to restore the selected VM files to the specified location.

Restoring VM Guest OS Files

With the **Restore** wizard, you can restore individual VM guest files from any successfully created backup or replica. This section will guide you through all steps of the wizard and provide explanation on the offered options.

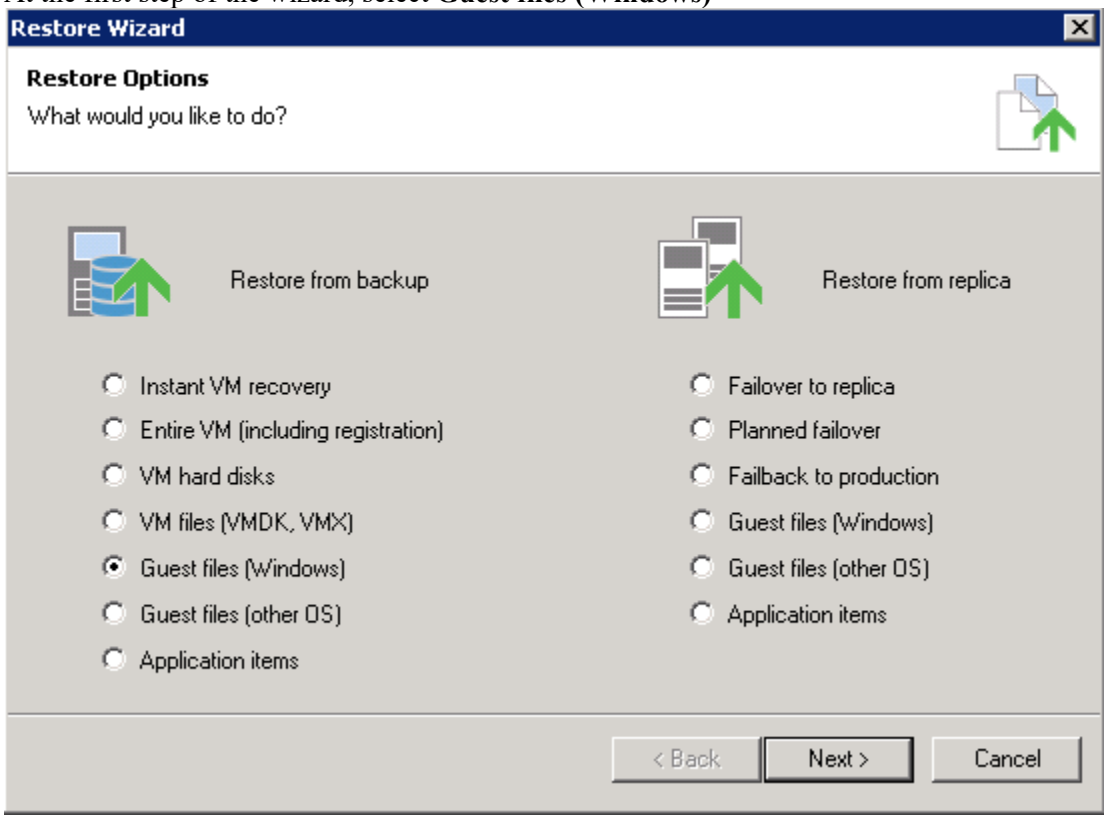
Step 1. Launch the Restore Wizard

To launch the **Restore** wizard, in the **Home** tab, click the **Restore** button on the toolbar.

You can also, from the management tree on the left side, branch open **Backups** then click **Disk.** Right–click a necessary VM in the corresponding backup job and select **Restore guest files (Windows)...**. In this case, you will pass to the step 4 of the wizard.

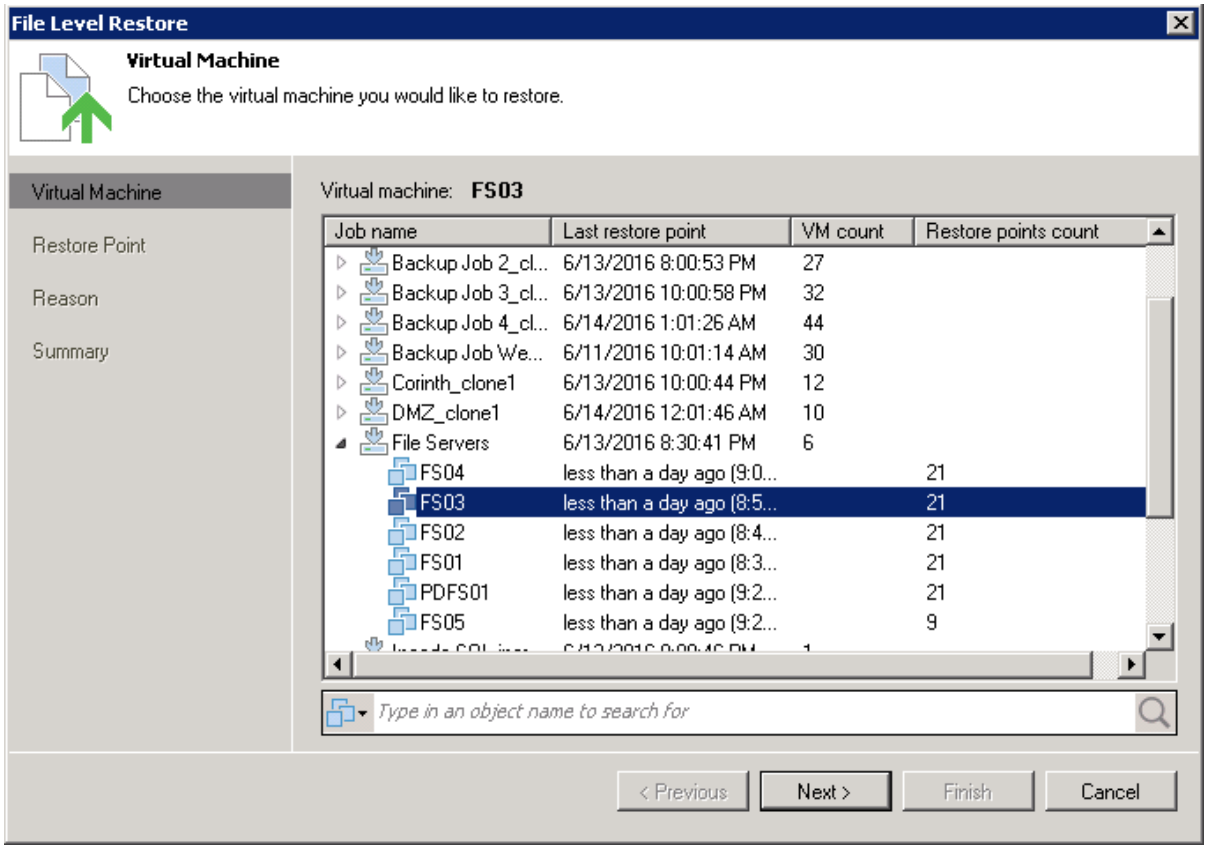
Step 2. Select a Task

At the first step of the wizard, select **Guest files (Windows)**



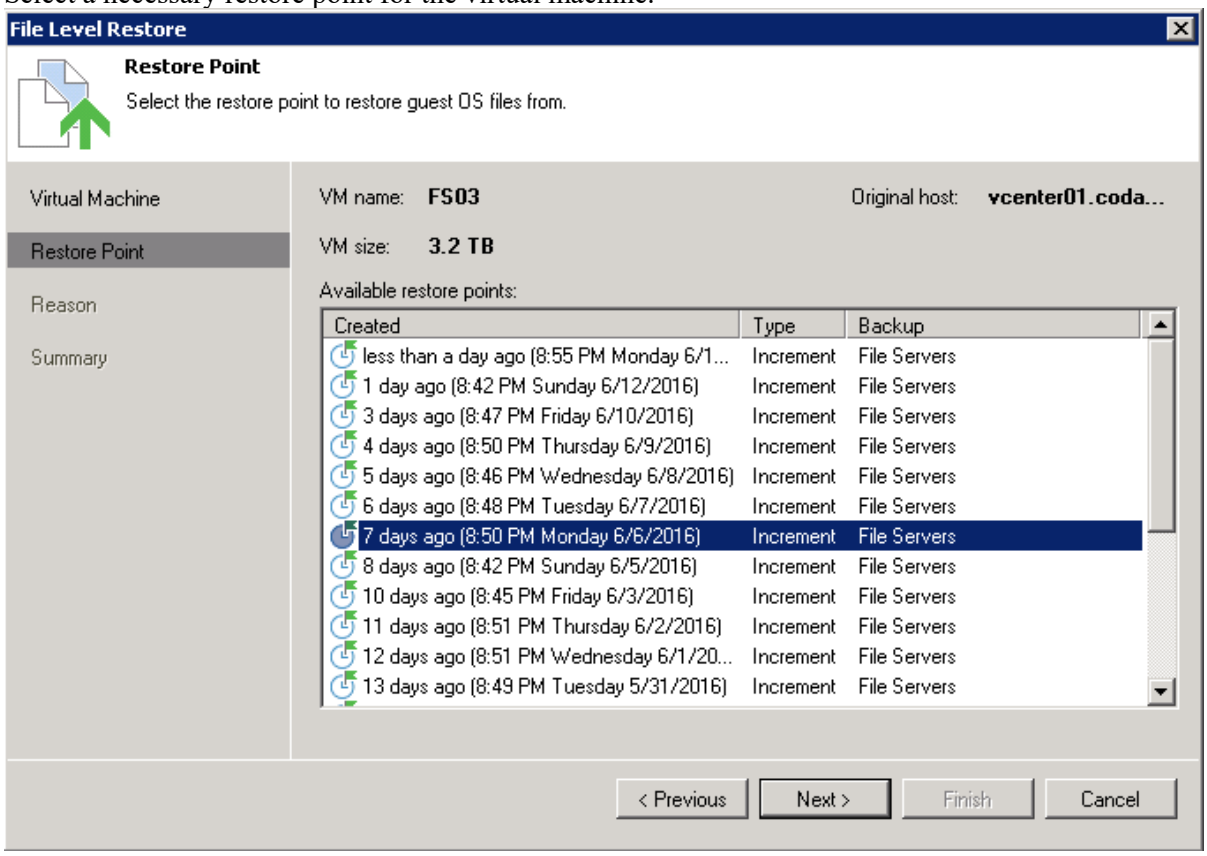
Step 3. Select a Virtual Machine

In the list of available jobs, select a necessary virtual machine.



Step 4. Select the Restore Point

Select a necessary restore point for the virtual machine.



Step 5. Reason

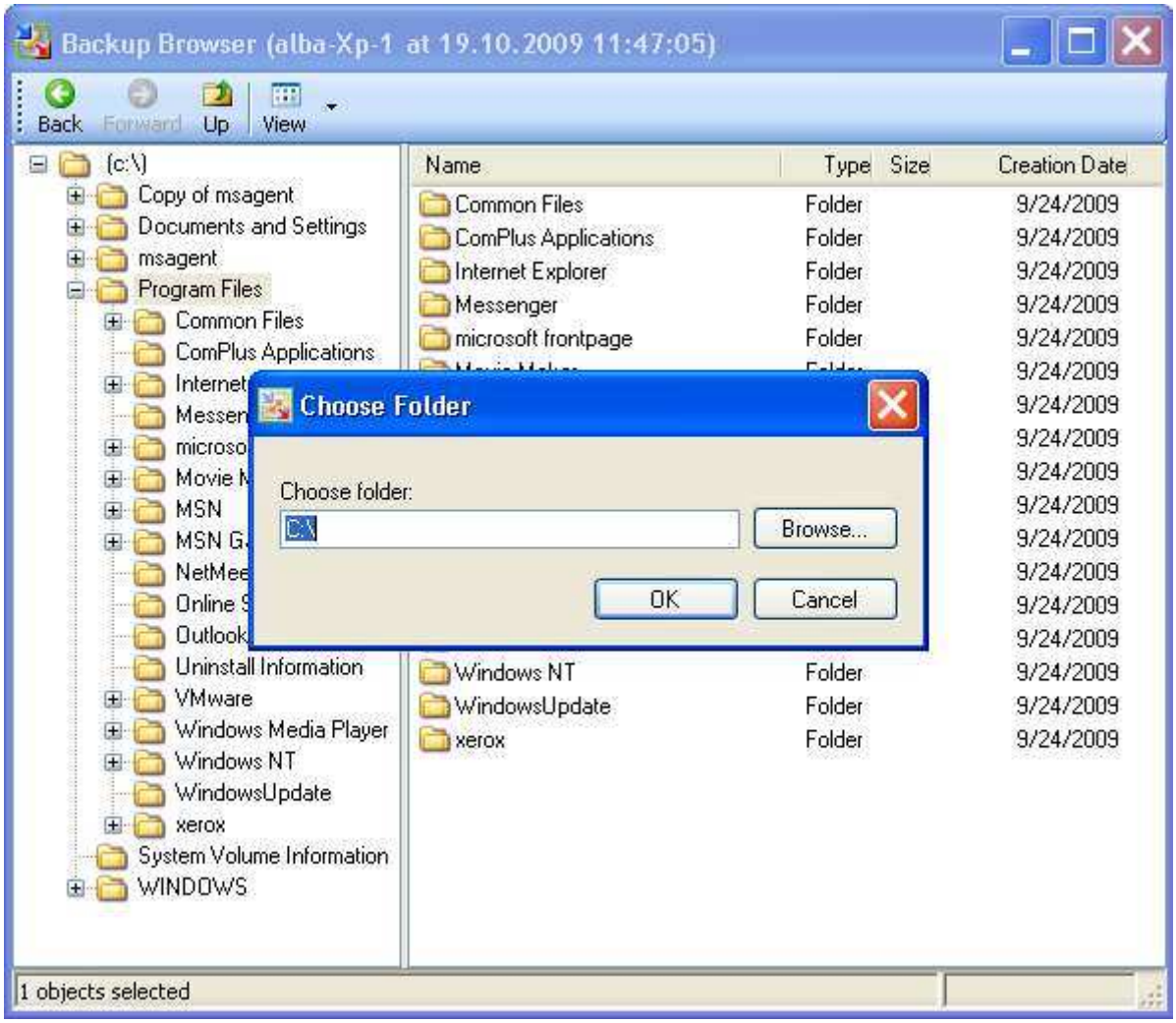
Enter a detailed reason for the restore of the files.

Step 6. Finish Working with the Wizard

Click **Finish** to start restoring files from a backup or replica. Once restoring is completed, a file browser displaying the file system tree of the restored virtual machine will be opened. Please note that the names of the restored machine drives may differ from the original ones.

Step 6. Save Restored Files

To save restored files or folders on the local machine or within the network, right–click a necessary node in the file system tree and select the **Copy To...** command from the shortcut menu.



IMPORTANT!

You cannot restore files from a replica that is currently running, or in case the replication or backup job with the VM from which you want to restore files is being performed.

RETURN TO NORMAL OPERATIONS CHAPTER 7

Officially Closing a Declared Disaster Event Section 1

The purpose of this procedure is to detail the transition procedures going from disaster recovery to the return to normal operations. The members of the Response Teams will communicate the status of the recovery to the appropriate Core Response Team Leader. The Core Response Team Leaders will evaluate and verify that key files and automated processes are fully restored.

Approvals Required

Once the Core Response Team Leaders have made the decision that the disaster has been effectively recovered, the Chief Technology Officer and the IT Project Manager needs to be informed. The Chief Technology Officer or the IT Project Manager may then declare the official closing of a Technology Services declared disaster event.

Transition Procedures to Normal Operations Section 2

Notification of Technology Services Personnel

The Core Response Team Leaders will be responsible for notifying and scheduling their team members to facilitate the return to normal operations. Email and face-to-face communication will be the primary methods used to notify Technology Services team members of a declared disaster event closing. Decisions on modified staffing and comp time will be made by the Core Manager for each team and must be approved for all personnel by the Chief Technology Officer or IT Project Manager to ensure consistency and fairness.

The Chief Technology Officer or the IT Project Manager must notify the Deputy City Manager when the disaster has been effectively recovered by leaving a phone message and a detailed email, or, if requested, through pager notification. This is to be done before notification of external personnel.

Notification of External Personnel

Once the official closing of a Technology Services disaster event has been declared, the Communications/Logistics Support leader will coordinate and log the communication of the return to normal operations status. The User Support Team will often be charged with the responsibility of making these communications, but any Technology Services employee may also be asked to help as needed in this function.

Communication of recovery and return to normal operations should first be made to the Recovery Management Team managers and then to the end users affected as per the user impact matrix found in Part 3, Chapter 3, Section 7.

Notification may take the form of e-mail, voice mails, phone calls, message pages, or network broadcasts to the workstations. The notice of return to normal operations should be concise and include a summary of the system damage assessments, the actual recovery time achieved, any additional actions planned, a request for any unresolved issues, and a contact number and person for

more information.

Critical Incident Debriefing and Reporting **Section 3**

Within 24 to 48 hours of the return to normal operations, an incident debriefing meeting should be held. The meeting will be held to discuss any changes, resulting from interaction among teams during the declared disaster, needed to refine or improve the plan. The Business Continuity Plan Post Exercise Summary (Appendix 13) will be discussed for evaluating the overall success of the disaster recovery and the lessons learned.

RECOVERY MANAGEMENT TEAM CHECKLISTS CHAPTER 1

Role: Fire Chief **Section 1**

No.	Action Description	Actual Start/Stop Time	Complete Yes / No	Action/Comment/Status
1.0	Receive communication on the emergency.			
2.0	Contact the EOC Manager; direct the EOC Manager to contact the Department Response Team Leaders and alert them that a disaster may be declared.			
3.0	Based on initial information, activate Emergency Operations Center activation as necessary.			
4.0	Make sure all members of Recovery Management Team know to report to the designated Emergency Operations Center.			Refer to Part 5 “Call Trees” for Recovery Management Team Contact Information
5.0	Perform Initial Damage Assessment and Estimate the Length of Outage.			Length of outage variables: --Less than 1 hour --Greater than 1 hour, less than 2 hours --Greater than 2 hours, less than 12 hours --Greater than 12 hours, less than 24 hours --Greater than 24 hours, less than 48 hours --Greater than 48 hours --Outage length unknown
6.0	Estimate the loss based on outage.			

No.	Action Description	Actual Start/Stop Time	Complete Yes / No	Action/Comment/Status
7.0	MAKE DECISION If decision is to declare a disaster: • Notify the EOC MANAGER to contact all Response Team Leaders and notify them that a disaster has been declared. • Proceed to step 8.0 If decision is NOT to declare a disaster: • Management Team should stay on alert until all threat has passed. • Contact EOC MANAGER; direct EOC MANAGER to notify Response Team Leaders that a disaster has not been declared, but to remain on alert until further notice.			Refer to Part 5 "Call Trees" for Response Team Leader Contact Information.
8.0	Activate Emergency Operations Center.			
9.0	Report to the Emergency Operations Center. Refer to Appendix 02 for Emergency Operations Center designations and directions.			
10.0	Direct activities of the Recovery Management Team to facilitate recovery efforts at the Department recovery site.			
11.0	Supervise procurement of replacement equipment at the Department recovery site.			
12.0	Communicate formal status updates and guidelines on a regular basis to the Response Team Leaders.			

No.	Action Description	Actual Start/Stop Time	Complete Yes / No	Action/Comment/Status
13.0	Facilitate problem resolution/escalation and coordination between recovery teams.			
14.0	Establish a schedule for management coverage, as needed, in the Emergency Operations Center throughout the recovery effort.			
15.0	Maintain time line of recovery effort.			
16.0	Facilitate efforts to repair and return to the Primary Business Location.			

Role: Chief Technology Officer **Section 2**

No.	Action Description	Actual Start/Stop Time	Complete Yes / No	Action/Comment/Status
1.0	Receive communication on the emergency.			
2.0	Contact Management Response Team Members; refer to Part 5 “Call Trees” for contact information.			
3.0	Contact the Technology Services Response Team Call Tree Leader or Alternate, listed in Part 5, “Call Trees” using notification procedures in Appendix 01 “Call Tree Notification Script”.			
4.0	Contact the off-site storage facility for retrieval of backups and Off-Site Recovery Box, and arrange delivery to the Alternate site Refer to Part 3, Chapter 5, Section 1 “Assembly Locations”.			
5.0	Report to the Emergency Operations Center (see Appendix 02 for Emergency Operations Center designations and directions).			
6.0	Direct the Technology Services Response Team to execute disaster recovery procedures as outlined in Part 3 of the Business Continuity Plan.			
7.0	Communicate the recovery status to the Fire Chief on a regular basis.			

No.	Action Description	Actual Start/Stop Time	Complete Yes / No	Action/Comment/Status
8.0	Escalate issues/problems as necessary to the Fire Chief.			
9.0	Establish a schedule for the Technology Services Response Team. Coverage of 7 days/24 hours a day, as necessary.			
10.0	Identify replacement equipment as needed to restore the primary site.			
11.0	Participate in re-establishing operations at the primary site when available.			

Role: EOC Manager **Section 3**

No.	Action Description	Actual Start/Stop Time	Complete Yes / No	Action/Comment/Status
1.0	Receive communication on the emergency.			
2.0	As directed by the Fire Chief, contact the Response Team Leaders listed in Part 5 “Call Trees” using the notification procedures in Appendix 01.			
3.0	Report to the Emergency Operations Center. Refer to Appendix 02 for Emergency Operations Center designations and directions.			
4.0	Assist all Response Team Leaders in contacting Department Response Teams listed in Part 5, “Call Trees” using notification procedures in Appendix 01.			
5.0	Advise the Fire Chief of assets and alternatives available based on the scope of the situation and understanding of COD resources.			
6.0	Communicate status/escalate issues and problems as necessary to Fire Chief.			
7.0	Assist the Recovery Management Team and Department Response Teams to facilitate recovery efforts at the Alternate Site.			
8.0	Assist in recovery operations at the primary site.			

Role: Director of Public Affairs **Section 4**

No.	Action Description	Actual Start/Stop Time	Complete Yes / No	Action/Comment/Status
1.0	Receive communication on the emergency.			
2.0	Determine status/accountability of personnel involved in the disaster situation.			
3.0	Provide/arrange assistance for those injured or impacted by the disaster.			
4.0	Report to Emergency Operations Center (see Appendix 2 for Emergency Operations Center designations and directions).			
5.0	Assist the Department Recovery Team to facilitate recovery efforts at the Alternate Business Resumption site.			
6.0	Address all media and regulator inquiries.			
7.0	Facilitate efforts to repair and return to the Primary Business Location.			

Role: Human Resources Director **Section 5**

No.	Action Description	Actual Start/Stop Time	Complete Yes / No	Action/Comment/Status
1.0	Receive communication on emergency.			
2.0	Contact the Administrative Support Response Team listed in the "Call Trees" section using the notification procedures in Appendix 1.			
3.0	Report to the Emergency Operations Center. Refer to Appendix 2 for Emergency Operations Center designations and directions.			
4.0	Assist Response Team Leaders in contacting Department Response Teams listed in Part 5, "Call Trees" using notification procedures in Appendix 1.			
5.0	Assist with supervising/delegating responsibilities to Administrative Support Team members, including: --Making travel arrangements; --Providing food at the Alternate Site; --Maintaining minutes of recovery status meetings; --Distributing information as needed; AND --Performing logistical support functions (i.e. phones, copies).			

No.	Action Description	Actual Start/Stop Time	Complete Yes / No	Action/Comment/Status
6.0	Coordinate mailroom functions from the primary to Alternate Site. Appendix 08 of the Business Continuity Plan.			
7.0	Arrange courier service as necessary at the Alternate Sites.			
8.0	Arrange conference calls with applicable recovery teams as necessary.			
9.0	Communicate status/escalate issues and problems as necessary to the Recovery Mgmt Team Leader.			

Role: Department Recovery Team Leader **Section 6**

No.	Action Description	Actual Start/Stop Time	Complete Yes / No	Action/Comment/Status
1.0	Receive communication on the emergency.			
2.0	Contact the Department Response Team Leaders listed in Part 5, “Call Trees” using the notification procedures in Appendix 01.			
3.0	Report to the Emergency Operations Center. Refer to Appendix 02 for Emergency Operations Center designations and directions.			
4.0	Direct the Department Response Team to execute the recovery procedures as outlined in the Department Response Plan found in Part 2 of the Business Continuity Plan.			
5.0	Develop and communicate status report and communication guidelines for the department. Include guidelines for customer service representatives to refer to when communicating with citizens.			

No.	Action Description	Actual Start/Stop Time	Complete Yes / No	Action/Comment/Status
6.0	Supervise communications with recovery team and citizens. Refer to the Department Response Plan in Part 2, Procedure 1 & 2.			
7.0	Work with TS and Operations to determine if it will be necessary to ascertain if agreed upon timelines for equipment and services can be met. Ensure that all travel has been suspended. Refer to the Department Response Plan in Part 2, Procedures 4 and 5.			
8.0	Communicate a recovery status to the Fire Chief and the Department Recovery Team on a regular basis.			
9.0	Escalate issues/problems as necessary to the Fire Chief.			
10.0	Work with the TS Response Team as well as the Recovery Management Team to determine when normal operations will be resumed.			
11.0	Establish a schedule for Department Recovery Team members.			
12.0	Participate in re-establishing operations at the primary site.			

OVERVIEW CHAPTER 1

The following call trees are to be used by the Recovery Management Team and each respective Department Response Team Leaders when contacting other employees at home or work to notify them of the occurrence of a disaster.

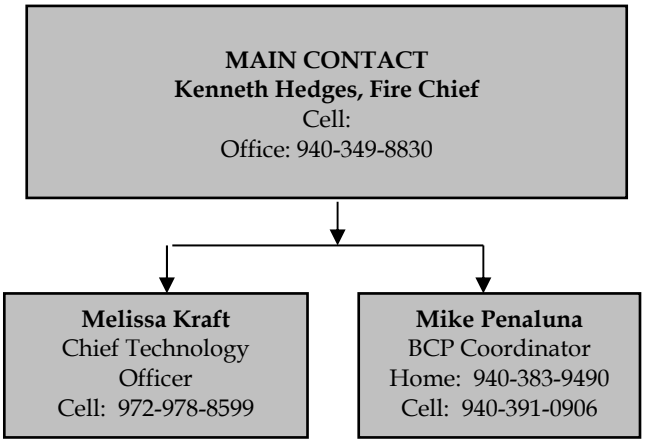
Refer to Part 6, Appendix 01, “Call Tree Notification Script”, before contacting any employees.

*****Anyone making phone calls as a result of a disaster should remain cognizant of the fact that it is possible an employee was at the site of the disaster when it occurred.*****

BUSINESS CONTINUITY RESPONSE TEAM CHAPTER 2

This call tree is to be used by the Recovery Management Team members when contacting other employees at home or work to notify them of the occurrence of a disaster.

Recovery Management Team Call Tree



DEPARTMENT RESPONSE TEAM LEADERS CHAPTER 3

This call tree is to be used by the Business Continuity Planning Coordinator when contacting the Department Response Team Leaders at home or work to notify them of the occurrence of a disaster.

Department Response Team Leaders Call Tree

TITLE	NAME	OFFICE NO.
Emergency Program Manager	**Penaluna, Michael**	940-349-8836
City Manager	**Hileman, Todd**	940-349-8560
Deputy City Manager	**Canizares, Mario**	940-349-8535
Assistant City Manager	**Hensley, Sara**	940-349-8224
Chief of Police	Dixon, Frank	940-349-7923
Deputy Chief-Police	Padgett, Frank	940-349-7906
First Asst. City Attorney	Leal, Aaron	940-349-8376
First Asst. City Attorney	Drake, Jerry	940-349-8333
Chief Technology Officer – Technology Services	Kraft, Melissa	940-349-7823
Senior Manager Applications & Support Services	Reed, Cherie	940-349-7533
Enterprise Applications Manager	Allsup, Sandra	940-349-7102
Enterprise Infrastructure Manager	Conrad, Curtis	940-349-7787
IT Project Manager	Allen, Drew	940-349-8067
Support Services Manager	Scott, Steve	940-349-7566
City Engineer	Estes, William	940-349-8917
City Secretary	Rios, Rosa	940-349-8309
CMO	Wood, Rachel	940-349-7718
Director – Economic Development	Rogers, Jessica	940-349-7531
Director – Electric	Puente, Tony	940-349-7283
Electric Communications Superintendent	Richardson, J.R.	940-349-7642
Director – Facilities Management	Hartley, Dean	940 349-8243
Director – Finance	Puente, Tony	940-349-7283
Director – Human Resources	Thomson, Tiffany	940-349-8344
Director – Libraries	Bekker, Jennifer	940-349-8753
Director – Parks	Packan, Gary	940-349-7460
Director – Planning	McDonald, Scott	940-349-8539
Director – Public Affairs	Kuechler, Sarah	940-349-8356
Deputy Director – Public Affairs	Adams, Ryan	940-349-8565
Director – Risk	Payne, Scott	940-349-7836
Director – Solid Waste	Cox, Ethan	940-349-8044
Deputy Director - Solid Waste	McKinnie, Eugene	940-349-8043
General Manager of Utilities	Banks, Kenneth	940-349-7165
Deputy Director – Water/WasteWater	Diviney, Rebecca	940-349-8461

TITLE	NAME	OFFICE NO.
Fire Chief	Hedges, Kenneth	940-349-8830
Fire Dept. – Fire Marshal	Becker, David	940-349-8860
Fire Dept	Goodman, Chuck	940-349-8853
Fleet Superintendent	Kader, Terry	940-349-8424
Municipal Judge	Fox, Holly	940-349-8139
Public Information Standby	PIO Pager	940-349-8509
Public Safety Dispatch	Dispatcher	940-349-7920
Purchasing Senior Buyer	Word, Jody	940-349-7132
Reprographics	Sherwood, Joyce	940-349-7750

TITLE	NAME	OFFICE NO.	PAGER NO	MOBILE
County Emergency Mgt.	Gonzalez, Jody	940-349-2840	940-565-6972	940-391-0217
Denton Independent School District	Grant, Theresa	940-369-0284	800-451-0491 #2042	940-391-8757
American Red Cross	Bueltel, Missy	940-384-0880	N/A	214-683-9587
SKYWARN	Marchant, Gerald	N/A	N/A	940-391-7584
DCTA	Neeley, Scott	972-221-4600	N/A	817-229-6871

TECHNOLOGY SERVICES **CHAPTER 4**

This call tree is to be used by the Technology Services Division when contacting other employees at home or work to notify them of the occurrence of a disaster.

Name	Division	Office Ext	Cell Phone
Allen, Drew	Administration	8067	303-589-1580
Allsup, Sandra	DME TS - Applications	7102	214-450-9945
Babcock, Kevin	Application Development	7868	940-367-4942
Barnes, Jim	Application Development	8530	940-390-4279
Belew, Mike	Application Development	8245	817-247-0105
Blair, Colson	GIS	8937	817-734-4546
Collaud, Lisa	TS Public Safety Support	7519	940-390-2077
Collier, Larry	DME TS	7539	817-944-5509
Conrad, Curtis	Administration	7787	972-998-9898
Darling, Kenn	DME TS - Applications	7313	817-771-8146
Desjardins, Paul	Infrastructure	7373	940-220-6310
Durnell, John	Infrastructure	7763	940-453-0267
Eady, Alan	DME TS	7878	214-802-8268
Ellison, Terry	Radio/Fiber Comm	7174	940-391-0657
Garabedian, Hovannes	TS Public Safety Support	7897	214-604-7921
Goodlett, Dan	DME TS	7562	469-503-1420
Griner, Thorpe	Support Services	7857	940-230-2449
Guajardo, Emilio	Radio/Fiber Comm	7164	940-735-2120
Jose, Irene	Administration	8191	214-334-2697
Klein, Miriam	Radio/Fiber Comm	7171	940-390-4308
Kraft, Melissa	Administration	7823	972-978-8599
Masters, Shelly	Support Services	7265	940-284-5510
McMichael, Ginger	Support Services	7830	940-453-0728
Miller, Brittany	Application Development	7490	817-944-7337
Miller, Debra	Support Services	8798	940-368-8351
Moericke, Zack	Regulatory Compliance	7737	817-689-5991
Morris, Lowell	Application Development	8267	214-537-3162
Munoz, Robert	Radio/Fiber Comm	7437	940-367-9520
Muthiani, Pete	Infrastructure	7536	972-837-3710
Padgett, Stephanie	Administration	8199	940-765-3472
Patel, Ashka	TS Public Safety Support	7981	908-410-7375
Rangel, Rich	Infrastructure	7453	972-836-8491
Reed, Cherie	Administration	7533	214-213-6335
Regenold, Joshua	Infrastructure	8347	940-230-5121
Roseberry, Eric	Administration	8266	972-965-6842
Scott, Steve	Support Services	7566	817-773-2399
Scott, Tony	Radio/Fiber Comm	7330	214-533-0437
Sharar, Thom	Infrastructure	8703	940-391-0115
Shook, Dusty	Support Services	7571	972-951-6727
Silva, Adam	Support Services	7248	940-783-0560
Smith, Lee Anne	Infrastructure	8797	214-908-3601
Smith, Tony	GIS	8933	972-358-0127
Smithers, Ken	Radio/Fiber Comm	7429	940-453-4691
Stewart, Brian	Application Development	7811	817-689-3753
Stockard, Jonathan	Radio/Fiber Comm	7175	940-902-1178
Tran, Doug	DME TS	8428	940-315-0723
Trantham, Aaron	Support Services	7550	903-271-5676
Warzwick, Fred	DME TS - Applications	7336	940-453-9727
Washington, Darrell	Radio/Fiber Comm	7311	940-300-3082
Werner, Coy	Radio/Fiber Comm	7459	940-230-8189
Wiltz, Cayden	Support Services	7856	337-764-4006
Young, Kyle	Regulatory Compliance	7623	214-693-8097

Call Tree Notification Script

This procedure is to be used by anyone contacting employees at home to notify him or her of the occurrence of a disaster. The purpose of this procedure is to standardize the information given to employees regarding a disaster and to prevent disclosure of information about the disaster to anyone outside the city.

Anyone making phone calls because of a disaster should also be cognizant of the fact it is possible that the employee was at the site of the disaster when it occurred. Using this script will prevent unnecessary panic for the family members of the employee.

Contact via direct phone:

"Hello, may I speak with _____ please?"

If the employee is not at home, state the following:

"When he/she returns, would you ask them to please contact me immediately at the following number _____."

If the employee is home, explain the following:

- Give the employee a brief description of the situation that has occurred, what it has impacted, and the estimated length of the outage, if known.
- Tell the employee where to report and when/how long they should expect to stay.
- Remind them to bring any recovery procedures with them.
- If travel arrangements are to be made for the employee, inform them of where and when they are expected, and verify that they have the information to make the arrangements.
- If the employee is to remain at home, inform them they are to remain on-call and prepared to report for work.
- Remind the employee they are not to speak to anyone external to the city regarding the situation.

Alternate Site/Command Center Contact Information and Directions

Contact Information

The ***Primary*** Command Center:

- ***City of Denton Technology Services***
  601 East Hickory Street, Suite A
  Denton, TX 76205-6315

- Contact Person: Melissa Kraft (W) (940) 349-7823
  (C) (972) 978-8599

- Command Center Phone Number: (940) 349-8562

- Command Center Fax Number: (940)-349-8533

If the nature of the disaster is such that the primary Command Center is not in suitable condition for the Recovery Management Team to meet, then the initial Command Center will be at:

- ***DME Operations & Engineering Building***
  1685 Spencer Road
  Denton, TX 76205

- Technology Services Functions Coordinator: Melissa Kraft

- Command Center Phone Number: (940) 349-8562 (Fwd)

- Command Center Fax Number: (940) 349-8533 (Fwd)

City of Denton – Primary Command Center Location

Directions from DFW Airport to Technology Services Office

3200 E Airfield Dr
DFW Airport, TX 75261

Get on TX-360 N in Euless from E Airfield Dr

8 min (4.0 mi)

1. Head south toward E Airfield Dr

36 ft

2. Turn right at the 1st cross street onto 31st Ave S

341 ft

3. Turn right onto E 32nd St

404 ft

4. Turn left at the 1st cross street onto E Airfield Dr

2.9 mi

5. Use the left 2 lanes to turn left onto E Mid Cities Blvd

0.5 mi

6. Turn right

0.3 mi

7. Use the left lane to take the ramp onto TX-360 N

0.2 mi

Drive from TX-114 W/Hwy 114 W and US-377 N to Denton

39 min (30.0 mi)

8. Merge onto TX-360 N

2.6 mi

9. Take the exit toward TX-114 W/FM 1709/Southlake

2.3 mi

10. Keep left, follow signs for 114 W and merge onto TX-114 W/Hwy 114 W

10.2 mi

11. Turn right onto US-377 N

14.6 mi

190 ft

13. Turn right onto W Collins St

0.1 mi

14. Turn left onto S Locust St

0.2 mi

15. Turn right at the 1st cross street onto Eagle Dr

203 ft

Take S Bell Ave to E Hickory St

2 min (0.8 mi)

16. Turn left at Dallas Dr

243 ft

17. Slight left onto S Bell Ave

0.6 mi

18. Turn right onto E Hickory St

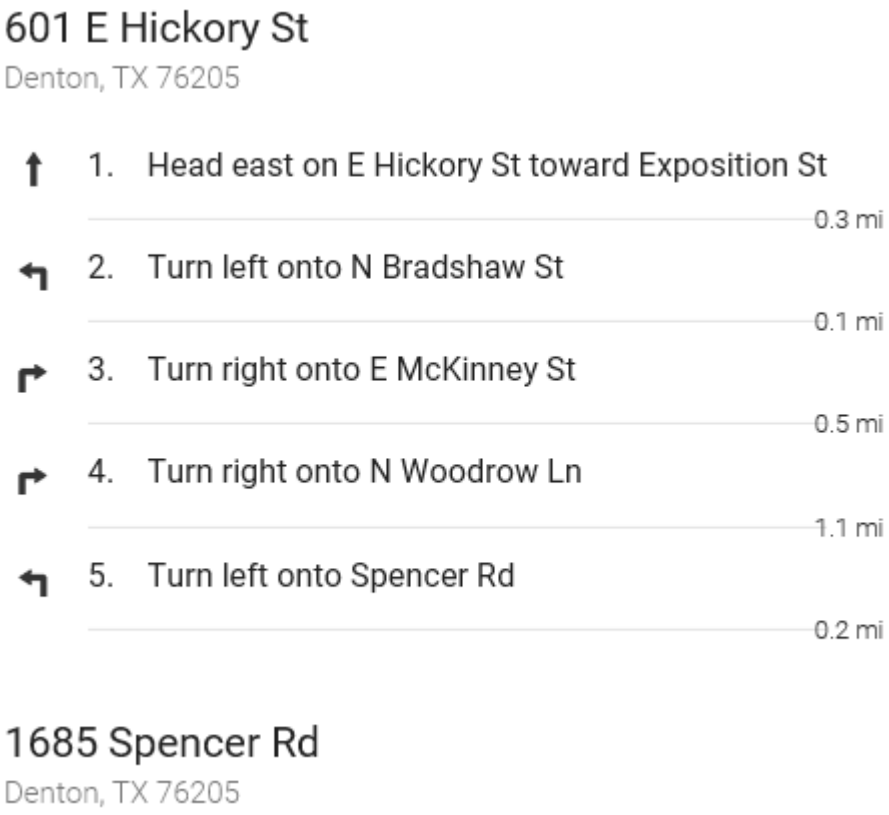
0.1 mi

601 E Hickory St
Denton, TX 76205

DRIVING DIRECTIONS

Start:	**CITY HALL – EAST**	**601 E Hickory Street** Denton, TX 76205-4304, US
End:	**DENTON MUNICIPAL ELECTRIC**	**1685 Spencer Road** Denton, TX 76205-6315, US

Driving directions to 1685 Spencer Rd, Denton, TX 76205



Communications Guidelines

Do's	Don'ts
Follow guidelines set forth in the City of Denton Business Continuity Plan.	Don't overreact or exaggerate the impact of an emergency/disaster. Don't attempt to assign the blame.
Refer to the disaster by name (i.e. flood, power interruption, fire).	Avoid using emotionally-loaded words such as "catastrophe" and "disaster".
Be calm and assure citizens that the incident is under control and that the City of Denton is prepared to address the situation.	Try to keep the length of phone calls as short as possible, especially in the first hours after a disaster, there may be limited phone access.
Refer news media calls to the Recovery Management Team Member in charge of Communications. It is extremely important that all messages from the City of Denton to the media are consistent, up-to-date, and accurate.	Use land lines when possible; cell phone conversations are not secure.
Share with the Citizen an overview of City of Denton's Business Continuity Plan and Disaster Recovery Strategy. This will help the citizen to better understand why the City of Denton is able to respond and recover quickly in a disaster situation. Specific points to make sure and cover include: The City of Denton has a comprehensive Business Continuity Plan that outlines recovery strategies for critical business functions; as well as information technology and telecommunications. The City of Denton maintains an alternate site with the necessary space, equipment and systems to recover critical functions within the same business day. It is a City of Denton policy that the Business Continuity Plan is reviewed and updated quarterly. It is a City of Denton policy to test the Business Continuity Plan to ensure that viable recovery strategies are in place.	Don't discuss the extent of the damages, the number of people hurt or the possible impact to customer services.
Update the "Citizen Communication Log" with the content and status of each conversation with Citizens.	Don't make "Off the Record" remarks.
Using the Status Update as a guide, be honest with the citizen about the status of the City of Denton's operations.	Don't make false representations (i.e. tell citizens that it is business as usual when it is not).
Keep your manager updated on the status of all Citizen relations and involve your manager sooner rather than later.	Don't try to handle troubled or highly inquisitive Citizens by yourself. Refer them instead to the Public Information Officer.

Citizen Communication Log

Date & Time	Person Contacted	Company	Summary of Conversation/ Issues	Follow-up: (date & time)

Recovery Location Assignments and Contact Information*

Employee Name	Department	Dept Phone #	Dept Fax #
Scott Gray	Airport/ Transportation	349-7702	349-7289
Lori Hewell	Budget/Procurement	349-7100	349-7302
Emily Loiselle	Building Inspections	349-8378	349-7208
Rachel Wood	City Manager's Office	349-8310	349-8596
Steve Prachniak	Customer Service	349-7421	349-7211
Jessica Rogers	Economic Development	349-7774	349-7239
Brent Heath	Electric Administration	349-7544	349-7649
Dean Hartley	Facilities Management	349-8243	349-8242
Tony Puente	Finance	349-7277	349-7206
Kenneth Hedges	Fire	349-8853	349-8109
Terry Kader	Fleet Services	349-8729	349-8434
Tiffany Thomson	Human Resources	349-8344	349-8348
Aaron Leal	Legal	349-8333	349-7923
Jennifer Bekker	Library Services	349-8750	349-8260
Lorri Brighton	Municipal Court	349-8516	349-8325
Gary Packan	Parks and Recreation	349-7460	349-8384
Scott McDonald	Planning	349-8504	349-7707
Frank Dixon	Police	349-7923	349-7966
Sarah Kuechler	Public Affairs	349-8234	349-7444
Scott Payne	Risk Management	349-7836	349-7870
Ethan Cox	Solid Waste	349-8044	349-7334
Melissa Kraft	Technology Services	349-8562	349-8533
Rebecca Diviney	Water/Wastewater	349-7194	349-8456

*Refer to the Off-Site Recovery Box for additional recovery locations and contact information.

Damage Assessment Form

Completed By: _____
Date: _____

Damage Assessment Instructions:

If physical damage to the site has occurred, complete this form to document the type and extent of the damage. In addition to completing this form, if possible, damaged areas should be video recorded or photographed for insurance claim reporting purposes.

Part A – Location: _____

Reception Area

_____

_____

Large Conference Room

_____

_____

Small Conference Room

_____

_____

Rest Rooms

_____

_____

Hall Way

_____

_____

Break Room

_____

_____

Switch and Server Room

_____

_____

_____

_____

Staff Work Area

_____

_____

Operations Area

_____

_____

Executive Management Area

_____

_____

Risk/Safety/Compliance Area

_____

_____

Mailroom

_____

_____

Part B – Location: _____

Stair Well

_____

_____

Rest Rooms

_____

_____

Hall Way

_____

_____

Training Areas/Conference Rooms

_____

_____

Switch Room and On Site Services

_____

_____

Tech Support Area

_____

_____

File Room

_____

_____

Part C

Date: _____

1. Do the offices appear to be serviceable as is?

   _____

   _____

   a) Will cleanup be needed before operations can be resumed?

      _____

      _____

   b) Will building repairs be needed before operations can be resumed?

      _____

      _____

2. Is the structural integrity of the building questionable and in need of review by an engineer?

   _____

   _____

3. Is the facility physically secure?

   _____

   _____

   a) Are windows or doors broken?

      _____

      _____

   b) Are entrance and exit locks working normally?

      _____

      _____

4. Is there normal electrical power?

   _____

   _____

5. Is there water?

_____

_____

6. Are the heating/cooling systems working properly?

_____

_____

COMMUNICATIONS

7. Are the telephones working?

_____

_____

8. Are the data lines working?

_____

_____

a) Are you able to access Systems?

_____

_____

b) Is it possible to send/receive faxes?

_____

_____

SUPPLIES

9. Are necessary supplies damaged or missing?

_____

_____

10. What is needed to resume normal operations?

_____

_____

Tech Services Recovery Log

Date & Time	Status of recovery or recovery related event (including: Recovery Mgmt. Team Meetings, specific business area updates, issues, or issue updates, phone conversations, etc.)	People Involved	Follow-up: (date, time, tasks, person responsible)

Date & Time	Status of recovery or recovery related event (including: Recovery Mgmt. Team Meetings, specific business area updates, issues, or issue updates, phone conversations, etc.)	People Involved	Follow-up: (date, time, tasks, person responsible)

INSTRUCTIONS FOR COMPLETION OF CITY OF DENTON ACCIDENT/INJURY REPORT

- Please use ink and write in print. All information is important so please complete every applicable box.

- This form should be completed under the following situations:

  - **VEHICLE ACCIDENTS** involving City vehicles or equipment where damage occurs to City vehicle or equipment and/or vehicles belonging to the members of the public. ***Complete Sections A and C***.

  - **ON-THE-JOB INJURIES** to City employees where the employee receives medical attention (City Nurse, doctor, hospital) **or** loses more than four (4) hours from work. ***Complete Sections A and B***.

  - **DAMAGE TO CITY PROPERTY** other than vehicles **or DAMAGE TO PROPERTY BELONGING TO A MEMBER OF THE PUBLIC**, other than vehicles, caused by or alleged to be caused by a City function. ***Complete Sections A and D***.

  - **INJURIES TO MEMBERS OF THE PUBLIC** that resulted or alleged to have resulted from City functions. ***Complete Sections A and E***.

  - **NOTE: If said injury resulted from a vehicle accident involving a City vehicle, complete Section C as well.**

- Vehicle accidents that result in **absolutely no damage** or on-the-job injuries that require **no medical attention** and **no time away from work** need not be reported on this form. However, some form of record of this occurrence should be kept in the department.

- All reports should be submitted to Risk Management **no later than three (3) business days following the date of the occurrence**. If all signatures required on the report cannot be obtained by this deadline, a copy of the report containing the necessary information and at least the supervisor's signature should be forwarded to Risk Management to meet the required deadline. The remaining signatures should be obtained and the original forwarded to Risk Management as soon as possible.

CITY OF DENTON
ACCIDENT/INJURY REPORT

This form must be completed for all accidents involving City of Denton Employees, Vehicles, or Property. Please complete all related sections, front and back, and send to the Risk Management Department within 3 days of the accident. This form must be signed by the employee involved and the employee's supervisor; however, if signatures cannot be obtained within 3 days, the form should be forwarded to Risk Management and a signed form forwarded as soon as possible.

SECTION A - GENERAL INFORMATION

Employee Name:_____ Home Phone #: (____) _____

Home Address: _____ City, State, Zip Code: _____

County: _____ Job Title: _____ Date of Hire: _____

Dept.: _____ HBU#: _____ Years with City: _____ Years in Occupation: _____

Social Security #: _____ Date of Birth: _____ Race: _____ Sex: M☐ F☐

Does employee speak English? Yes ☐ No ☐ Marital Status: Married ☐ Widowed ☐ Separated ☐ Single ☐ Divorced ☐

Spouse's Name: _____ Number of Dependent Children: _____

Date of Occurrence: _____ Time of Occurrence: _____ am☐ pm☐ Date Reported: _____

Worksite Location if Injury (stairs, dock, etc.): _____

Address/Location of Occurrence: _____

Describe Injury or Accident and How or Why it Occurred: _____

_____

_____

_____

_____

Witness' Name (Include Address if Not a City Employee): _____

_____

Was drug test given? Yes ☐ No ☐ If not, state reason: _____

SECTION B – EMPLOYEE INJURY

Professional Medical Attention Needed? Yes ☐ No ☐ If so, Hospital/Clinic: _____

Doctor: _____ Last Workday Other Than Day of Injury? _____

First Full Workday Lost After Injury: _____ Date Returned to Work: _____

Hourly Rate of Pay: _____ # Hours Scheduled Per Week: _____ Employee Doing Regular Job? Yes ☐ No

Supervisor: _____ Supervisor Notified? Yes ☐ No ☐ Part of Body Injured: _____

Tool, Equipment or Other Cause of Injury: _____

Type of Safety Equipment Provided: _____ Equipment in Use? Yes ☐ No ☐

If "No", Why Not? _____

Did Failure to Use Safety Equipment Contribute to Injury? Yes ☐ No ☐

SECTION C – VEHICLE ACCIDENT OR DAMAGE

Vehicle ID/EMIS #: _____ City Vehicle License #: _____ Was City Vehicle Damaged? Yes ☐ No ☐

Other Vehicle License #: _____ Year: _____ Make and Model: _____

Other Driver's Name: _____ Address: _____

Phone Number: (____)_____ Other Vehicle Identification Number: _____

Insurance Company: _____

Policy Number: _____ Insurance Agent's Phone #: (____)_____

Weather Conditions: _____ Road Conditions: _____

Description of Damage: _____

SECTION D – DAMAGE TO PROPERTY (OTHER THAN VEHICLES)

Type of Property Damaged: _____ City Owned? Yes ☐ No ☐

Owner: _____ Address: _____ Phone #: (____) _____

Description of Damage: _____

SECTION E – INJURY TO MEMBER OF THE PUBLIC

Other Party Name: _____ Address: _____

City, State, Zip Code: _____ Phone #: (____) _____

Nature of and Part of Body Injured: _____

Ambulance Needed? Yes ☐ No ☐ Hospital: _____ Doctor: _____

SECTION F – CORRECTIVE ACTIONS/PREVENTATIVE MEASURES

What will your department do to help prevent this incident from reoccurring?

What can Risk Management do to help prevent this incident from reoccurring?

Employee Signature: _____ Date: _____

Supervisor's Signature: _____ Date: _____

Mail Re-Routing Form

The mail recovery and re-routing process will be led by the Procurement department.

Equipment
On a daily basis COD uses a Pitney-Bowes Meter and Scale. At the alternate site it will not be necessary to obtain a new meter immediately. All out-going mail will be taken to the Post Office to be metered.

Airmail
It will be necessary to contact all airmail companies and let them know to re-route all COD airmail packages to the alternate site or hold the packages at the nearest office.

FedEx:	1-800-GO-FEDEX	Account Number:	3109-8010-2
UPS:	1-800-782-7892	Account Number:	Y442F3

U.S. Postal Service
It will also be necessary to contact the Post Office and let them know that all mail to the affected building(s) (City Hall East at 601 E. Hickory, City Hall at 215 E. McKinney, or Service Center at 901-B Texas Street) will need to be held at the post office for pick-up.

The City of Denton is serviced by the Downtown Post Office, phone number (940) 387-8555.

Office Supplies Ordering Procedures

City Of Denton's Office Supply vendor is Staples Office Products. The City Of Denton's purchase methodology is to bring up the site on www.orders.staplesadvantage.com and use the department account number and password issued. The local vendor for office supplies is Staples, where a City of Denton issued P-Card may be used to purchase supplies. Receipts for purchases must be kept and submitted to the accounting department for tracking costs by the next business day.

Staples Products Contact Information is as follows:

Phone: 817-310-0261

Address: 200 N Kimball Ave
Suite 221
Southlake, TX 76092

Account Rep: Cathy Hanna
(C) 817-296-8470
(F) 508-382-4660
Cathy.Hanna@staples.com

Web: www.staplesadvantage.com

Critical Staff and Equipment Requirements per Department Section 1

Business Unit	Employees	PC's	Printers	Radios	Phones/Cell	Faxes
Airport	4	4	1	2	4/4	1
Building Inspections	6	6	1	0	1/6	0
CMO/PR	12	9	2	0	9/0	1
Customer Service	12	12	4	1	10/0	1
Economic Development	5	5	1	0	5/0	1
Electric Dispatch	2	7	1	2	3/0	1
Facilities Management	12	3	0	0	1/0	0
Finance	4	4	1	0	4/0	1
Fire	10	5	1	6	5/0	1
Fleet Services	1	1	0	0	1/0	0
Human Resources	2	2	1	0	2/0	1
Legal	9	14	2	0	10/0	1
Library Services	11	0	0	0	1/0	0
Municipal Court	5	5	2	0	5/0	1
Parks and Recreation	2	0	0	0	1/0	0
Planning	5	5	0	0	5/0	0
Police	28	29	4	2	12/0	1
Purchasing	3	6	1	0	6/6	1
Risk Management	3	1	1	0	2/3	1
Solid Waste	6	6	1	0	6/0	1
Water Reclamation	4	4	1	0	1/0	1

Functions, Applications and Priorities

Functions and Priorities Section 1

Business functions and priorities are as follows:

Responsible Business Area	Function	Priority	Required Systems
CMO/PIO	Public Information, City Management	AAA	Exchange/Outlook, LaserFiche
Denton Municipal Electric	Electric Power Supply, Radio and Fiber communications, System Operations.	AAA	Cisco Phones, Internet, SharePoint
Police & Fire	Public Safety and First Responders	AAA	Visionair, Cisco Phones
Technology Services	Phones, Pagers, Cell phones, and all Technology tools used by the city	AA	
Utility Field Services	Service Crews in the community	AA	
Water Reclamation	Water Supply and Wastewater Disposal	AA	GIS
Materials Management	Procurement Warehousing	AA	JDE, Purchasing Sales Order
Customer Service	Cashiering function for multiple city departments, collecting for utilities, property tax, accounts receivable	A	Harris, Cisteria, Cisco Phones
Legal	Litigation representation, document preparation, prevention of litigation, and contract negotiations	A	LaserFiche
Fleet	Maintain and repair of all city vehicles, mgmt of the motor pool, fuel, and counter sales of automotive parts and miscellaneous equipment	A	Faster
Solid Waste	Residential and commercial waste services, landfill management, customer relations, and communication to regulatory agencies	A	Paradigm
Finance	Payroll, payments to vendors, procurement, warehousing, and financial reporting	B	JDE – Finance/Payroll
Human Resources	Training, maintains personnel records, develops HR related policies, ensures compliance with employment laws	B	JDE LaserFiche
Airport	Public transportation, specialized services for disabled, low income & students, terminal control, air ambulance/airlift support	C	

Responsible Business Area	Function	Priority	Required Systems
Building Inspections / Planning	Zoning controls and review process, issues building permits, processes plat certifications, inspects restaurants for health code compliance	C	TrakIt
Library	Information resources, historical documents, subscription databases, indexes of periodicals, literacy classes, GED classes	C	Millennium
Municipal Court	Court clerical functions and services to the Judge's Office, provides enforcement of Class "C" misdemeanors	C	Incode,Teleworks/Paymentus
Risk Management	Administers insurance and benefits, and the self-insured liability programs	C	JDE
Facilities Management	Facilities management for the city, including physical security (ID's and card access), maintains alarms	D	HVAC System
Economic Development	Community development grants and efforts, repair and rebuilding of homes, downtown revitalization	E	Outlook
Parks	Grounds maintenance and management for most city properties, run recreation facilities, provide day care and various recreation activities	E	Rec1

Applications and Priorities Section 2

Critical applications and priorities for the Technology Services group are as follows:

Application	Priority
General Phone System	AAA
Restore Capability	AAA
VisionAir	AAA
Network Availability / Authentication	AAA
Outlook	AA
Internet Access	A
JD Edwards	A
Harris Utility Billing System	A
Fleet	A
Laserfiche	A
Court system (Incode)	C
Superion/CRW (Trak-It)	C
GIS	C
Teleworks/Paymentus	C
Intranet Applications	D
Rec1	E
Cherwell	E

Pre-Exercise Overview

City of Denton Technology Services

Business Continuity Plan

Date of Exercise: _____

Location of Exercise: _____

Facilitated by: (EOC Manager)

Documented by: (Administrative Assistant to Technology Services)

COD Policy:
All City of Denton departments will ensure that a business continuity plan exercise, for both critical and other department functions, is reviewed at least annually and will be periodically tested in co-ordination with the EOC activation drills.

Attendance:
In order to have an effective and thorough exercise, it is extremely important that each Recovery Management Team member attends. The list of attendees will become part of the summary report. Participation is one of the key success factors in this exercise and will be measured by the Recovery Management Team.

Departments Involved:
List all departments involved.

Results to be reported to:
Report results to the Department Management of each area involved, Executive Management, and the EOC Manager.

Type of Exercise:
Paper Walk-Through Exercise – A walk-through exercise is a desktop exercise of the Business Continuity Plan. Team members will be assembled and presented with a disaster scenario and asked to discuss how to respond to the event as if it had truly occurred.

Scope of Exercise:
All general, administrative, network, application, and department recovery procedures documented in the (department) Business Continuity Plan will be exercised. The objective will be to discuss the recovery of critical functions during a business interruption, as documented in the recovery plan. Emphasis will be on the clarity of management's direction and organization, communication, feasibility of systems and telecommunications, retrieval of vital records and recovery materials, and accuracy of documented recovery procedures.

Exercise Schedule:
(Sample time frames, allow more for large departments, and less for smaller ones. Remember; it is better to allow too much time, rather than not enough.)

DAY 1

9:00 am – 10:00 am Introduce and deliver overview of the Business Continuity Plan and present entire scope of the exercise.

- TS Participants: TS site management needs to attend this section.
- Department Participants: Management from each department need to participate in this section.

10:00am – 11:30 am Present disaster scenario (below) and exercise the general recovery procedures, including: notification, command centers, disaster declaration, etc.

- TS Participants: TS site management and key staff needs to attend this section.
- Department Participants: Management from each department being exercised and the key staff listed in the department's recovery procedures need to participate in this section.

11:30 am – 12:30 pm Lunch

12:30 pm – 2:30 pm TS Recovery Exercise

- TS Participants: TS site management and any TS staff that would be involved in a recovery effort needs to attend this section.
- Department Participants: It is not required for any department representatives to attend this exercise, however, department managers (or their designees) are invited and encouraged to observe.

2:30 pm – 4:30 pm Department Recovery Exercise

- TS Participants: Always make sure there is TS participation in department exercises.
- Department Participants: All business representatives given responsibilities in the recovery plan need to attend this section.

Disaster Scenario:

Be sure to review the disaster scenario carefully and edit it to make it realistic to the department. You may want to add details specific to the site, or change the type of disaster to reflect a more prominent risk for the site.

At 2:45 am Monday (or night before the exercise begins), the (building location) fire alarm goes off. The responding officer can see on the control panel that there is smoke on the (floor department is located on) floor. As he enters the hallway from a service entrance on the first floor, he can see smoke coming from the second floor. Upon investigation, he discovers a fire in a break room that appears to be spreading rapidly. He verifies that the building is vacant, and assists the fire department upon their arrival. The fire overtakes floors 2 and 3 before the fire department is able to gain control of the fire. Building management is informed that no one will have access to the building for at least 36 hours, however re-entry by the general population is not expected for two weeks. The fire department states that upon initial investigation, floors 2 and 3 have suffered extensive damage. They further state that all equipment and files have sustained fire, water, and smoke damage and if salvageable, will require the recovery skills of a professional salvage company.

Participant Preparation:

During this section, each department will perform a 'walk-through' business continuity exercise. Using the above scenario, we will discuss step-by-step, what actions both management and staff would need to take to recover from a disaster. Each participant needs to review the Business Continuity Plan, particularly focusing on their departments' procedures. Be prepared to discuss any issues that might be encountered, and how you would respond to them. Think step-by-step through each task you would need to accomplish. Keep in mind that it might be 3-5 days before you could have access to all computers and the network (depending on the department risk classification). However, TS will be responsible for recovering the network and telecommunications requirements that will be summarized in this plan (TS staff need to be prepared to walk through the procedures they have documented as to how they will meet the departments' recovery needs). Be sure and consider the following:

- What would I do if an employee were injured?
- How would I get supplies?
- What functions would need to be recovered first?
- How would I identify critical, upcoming deadlines?
- How soon would I need to contact citizens?
- How would I contact citizens?
- What would I tell citizens?
- How would I contact employees and where would I tell them to report?
- If all my files were destroyed, what would I do?
- How would I identify the critical tasks that were in process at the time of disruption?

Objectives:

- Validate the general recovery declaration, notification, and administrative procedures and confirm that they are complete and accurate.
- Validate that the network, application, and telecommunication procedures are complete and accurate.
- Validate that network back-ups and disaster recovery materials that are stored off-site can be retrieved in the time of need.
- Validate that the departments' recovery procedures and resource requirements for both critical and functions that can be delayed are accurate and complete.

Success Criteria:

It must be noted that if any omissions or failings are highlighted during an exercise, it should not be regarded as a failure. However, it is important to take the exercise seriously. Be prepared, detailed, and comprehensive in the plan exercise. The following are some basic measurements for the success of the exercise:

- The documented list of participants actually attended the exercise.
- The off-site recovery materials were retrieved quickly and effectively.
- Participants left with a better understanding of how to respond in a disaster, and during the recovery process.
- The plan is refined and improved because of interaction among team members during the walk-through process.

SCENARIO FOR TABLE TOP EXERCISE
City of Denton Leadership Team
April 13, 2004

MONTH:	April
DAY:	Tuesday, 13th, 2004
TIME:	7:00 a.m.
PLACE:	City of Denton – City Hall East
PREDICTED WEATHER:	70's high 50's low

TODAY, 7:00 A.M:

1. Carla Romine, Director of Human Resources receives an envelope addressed as follows:
   Carla Romine, Director of Human Resources
   601 E. Hickory St., Suite B
   Denton, TX 76205

2. Upon opening the envelope, Carla discovers white powdery substance in envelope with a note stating "Misery Loves Company".

3. Carla calls 9-911 and reports the possible chemical attack. Before the Police & Fire Departments respond, Carla has gone to the bathroom in an attempt to wash the powder off herself, thereby spreading the potential contamination. Police and Fire respond and evacuate building. All parties inside building at the time are sent to hospital. The building is locked down and access to building is blocked. Later in the morning, Anthrax is confirmed as the contaminant and the building will be closed for a minimum of 6 weeks to decontaminate.

QUESTIONS TO CONSIDER – Let's ALL thing out loud!

What do you think your Department/Division has been doing after learning of this disaster? What resources have you used and do you have any left?

What do you forecast your Department/Division will be doing in the next 12 hours? What resources do you need?

Will you be able to accomplish your "normal" day-to-day City business today? The next 24 hours?

Post-Exercise Summary

City of Denton Technology Services

Business Continuity Plan

Date of Exercise: April 13, 2004

Location of Exercise: Police Training Room & Central Fire Station Conference Room

The following information within this appendix should be adapted to pertain to each specific exercise

Facilitated by: (Steve Timmons & Alex Pettit)

Documented by: (Administrative Assistant from Technology Services)

Commitment:
COD is committed to developing and maintaining a detailed and accurate business continuity plan. Included in this plan must be mechanisms ample to ensure the expeditious and sufficient continuation and recovery of critical business functions in the event of a partial or total disaster or business interruption.

Overview:
On April 13, 2004, a recovery exercise was executed by COD's Recovery Management Team members and the Department Response Teams. An envelope was opened by Carla Romine containing a white powdery substance that could possibly be a chemical attack.

Departments Involved:
Human Resources, Risk Management, Customer Service, Municipal Court, Police Department, Tax, Municipal Court Clerks, Municipal Judge, Engineering, Technology Services, Facilities Management, Public Information Office.

Attendance

Anthony Caranna – Technology Services
Bobbie Arashiro – Technology Services
Charles Atkinson – Utilities Customer Service
Glenn Pfullmann – Technology Services
John Hudson – Fire/Emerg. Management
Lee Hall – Technology Services
Paul Abbott – Police Department
Susan Croff – Utilities Admin.
Tom Josey – Municipal Court
Betty Evans – Technology Services
Caressa Marquez – Human Resources
Charles Fiedler – Engineering
John Durnell – Technology Services
Kathy Bates – Utilities Admin.
Mary Collins – Technology Services
Scott Payne – Risk Management
Tim Smith – Police Department

Not in Attendance:

Betty Williams – Public Information Office
Charles Wiley – Police
Howard Martin – Water Utilites Admin
Kathy DuBose –Fiscal & Municipal
Mike Conduff – City Manager
Bruce Henington – Facilities Management
Diana Ortiz – Tax/Treasury
Jon Fortune –Police Investigations
LeeAnn Bunselmeyer – Tax
Ross Chadwick – Fire

Results to be reported to:

Results will be reported to the Business Continuity Steering Committee.

Type of Exercise:

Paper Walk-Through Exercise – A walk-through exercise is a desktop exercise of the Business Continuity Plan. Team members were assembled and presented with a disaster scenario and asked to discuss how to respond to the event as if it had truly occurred.

Scope of Exercise:

All general, administrative, network, application, and department recovery procedures documented in the Business Continuity Plan were exercised. The objective will be to discuss the recovery of critical functions during a business interruption, as documented in the recovery plan. Emphasis will be on the clarity of management's direction and organization, communication, feasibility of systems and telecommunications, retrieval of vital records and recovery materials, and accuracy of documented recovery procedures.

Objectives:

The primary objectives and results of this exercise were as follows:

Objective	Status (Complete/Partial) (Sample)
Validate that recovery procedures exists for all critical functions at this site	Complete
Validate the current recovery procedures will be available at the alternate site at the time of need	Complete
Validate that the facilities at the alternate site was sufficient and properly equipped to allow for recovery of critical functions within the timeframe required	Partial
Validate that the desktop connectivity at the alternate site is complete to support the critical functions	Partial
Validate the recovery procedures are complete and accurately reflect the steps required to execute recovery of the critical functions	Complete

Success Criteria:

The following are some basic measurements for evaluating the success of the exercise. Refine and improve the plan as a result of interaction among team members during the exercise.

Determine the preparedness of the participants. Use the following questions as a basis for a summary of the participants' overall readiness.

Did the employees have an accurate understanding of the recovery strategy with regards to the following questions?

- What would I do if an employee were injured?
- How would I get supplies?
- What functions would need to be recovered first?
- How would I identify critical, upcoming deadlines?
- How soon would I need to contact citizens?
- How would I contact citizens?
- What would I tell citizens?
- How would I contact employees and where would I tell them to report?
- If all my files were destroyed, what would I do?
- How would I identify the critical tasks that were in process at the time of disruption?

Use the following questions as a basis for evaluating the overall success of the exercise:

- Were the general recovery declaration, notification, and administrative procedures complete and accurate?
- Were the network, application, and telecommunication procedures complete and accurate?
- Were the network back-ups and off-site recovery materials retrieved quickly and effectively in time of need?
- Were the departments' recovery procedures and resource requirements accurate and complete?
- Did the documented list of participants actually attend the exercise?
- Did the participants leave the exercise with a better understanding of how to respond in a disaster and during the recovery process?

Action Items:
The following is a list of specific action items that were identified during the exercise:

(Sample Exercise Action Items)

Action Item	Responsible Party	Estimated Completion Date	Issues or Comments
1. Update the Employee Call Trees	EOC Manager	7/20/99	14% of staff unreachable due to inaccurate phone numbers
2. Update the recovery procedures to reflect changes identified during exercise	Appropriate Department Response Team	8/15/99	Operations are currently writing an additional procedure
3. Include missing data/documents in Off-Site Recovery Box	EOC Manager	7/25/99	Missing manual to be included
4. Provide network connections for 4 desktops identified	TS Team	8/3/99	Connectivity to be installed next week
5. Install 2 additional phone lines and larger white board in the Command Center	EOC Manager	8/15/99	Phone lines to be installed and white board have been ordered

SCENARIO FOR TABLE TOP EXERCISE

MONTH: **April**

DAY: **Friday, the 7th, 2006**

TIME: **8:00 a.m.**

PLACE: **City of Denton – Technology Services Data Center**

DISASTER RECOVERY TEST *FINAL REPORT*

Introduction

The purpose of this document is to present observations and recommendations related to the Disaster Recovery Planning Test (DRP) conducted by Technology Services at the City of Denton on April 7, 2006.

The exercise focused on the Tax System, which requires same day recovery per the defined Recovery Time Objectives (RTO) in the Technology Services Business Impact Analysis.

Objectives and scope

The role of Dr. Timmons involvement in the exercise was to observe, document, and provide improvement recommendations for the DRP test conducted.

The scope of the DRP test, as determined by Technology Services management, included the following platforms with the specified objectives and success criteria as detailed in the table below:

Objectives and Success Criteria

PLATFORM	OBJECTIVES	SUCCESS CRITERIA
Tax System	1. System recovery before close of business on Friday, April 7th as defined in the BIA RTO's	Full system recovery prior to close of business on Friday
	2. Recovery of the Tax System MUST utilize existing documented procedures without deviation	Existing Tax System recovery procedures were utilized (without deviation) and successful recovery was completed
	3. Recovery of the Tax System MUST be accomplished by assigned personnel without management direction or assistance	No direction or assistance was provided to the team by Alex Pettit, Bobbie Arashiro, or Anthony Caranna
	4. Outage notification and status reporting procedures are performed through the recovery exercise	The appropriate users were notified of the outage and kept apprised of recovery status throughout the exercise

PLATFORM	OBJECTIVES	SUCCESS CRITERIA
	5. Appropriate users from the Tax group review and sign-off on the recovery efforts	The tax department reviewed the restored system, ensuring that the application(s) are functioning properly and current data is available End user sign-off on a successful recovery was obtained

Dr. Timmons conducted the following activities in support of the Technology Services leadership team:

- Designed the Exercise Overview document and Final Report format
- Worked with Alex Pettit, Technology Services Director, to design and develop the scenario for the exercise.
- Developed the exercise objectives and success criteria (scope defined by Technology Services).
- Facilitated the kickoff of the exercise on April 7, 2006.
- Observed the testing process conducted by the assigned Technology Services personnel.
- Documented DR test observations and provided improvement recommendations.

EXECUTIVE SUMMARY

Although the recovery team performed very well, they were unsuccessful in completing four of the five defined objectives for the Tax System Recovery exercise due to invalid backup procedures that allowed only a partial recovery of the target application.

The recovery team was successful in Objective #4: Notification and Status Reporting procedures are performed throughout the exercise.

Attached to this Final Report is observation notes provided by Ms. Bobbie Arashiro, Assistant Director of Technology Services for the City of Denton. Bobbie, along with Alex Pettit, Chief Technology Officer, and Dr. Timmons, observed the exercise conducted on April 7, 2006.

Although not validated, the recovery exercise appeared to be partially successful in that data from the tax system was recovered through the defined backup process. Although several complications arose during the recovery process (hard drives on the target server had to be re-partitioned), the team effectively and efficiently worked through those issues and completed the restore. However, when the recovered Tax System was brought up, the services required to run the Tax application were unavailable, and the target server had not been configured with the new name or IP address of the original Tax server. A second complete recovery was attempted, unfortunately yielding the same results.

Although there was consensus that the server name, IP, and Tax System services could be manually reconfigured on the target system, there was concern that this could cause problems with the production server environment. Therefore, the exercise was called at 4:00 pm by Bobbie Arashiro and Anthony Caranna. If this had been an actual failure of the Tax System, manual configuration

would not have been an issue. However, the recovery team and the Technology Services leadership team were quite concerned that the defined backup process would not produce the expected results.

During the exercise debrief that immediately followed, there was a consensus among the recovery team that a required component of the backup software (Symantec) was apparently missing…this is what allowed recovery of the data but not the system configuration. The team will be researching this in the immediate future.

It should also be noted that a more robust backup system (Bare Metal) has been purchased by the Technology Services organization, but due to port limitations within the current infrastructure, they have not been able to implement this solution. The likelihood of the events in January (the data loss associated with the LaserFiche server) or the limited success of the Tax System recovery exercise would likely have been mitigated had the Bare Metal system been implemented into production. However, in the interim it is strongly suggested that steps be taken to define a viable backup solution with current hardware and software capabilities.

Dr. Steve Timmons, SPHR, CBCP
April 8th, 2006

OBSERVATIONS AND RECOMMENDATIONS

DISASTER RECOVERY TEST PROCESS

Over the course of the exercise, Dr. Timmons observed the actions of the recovery team and analyzed the recovery effort by the Technology Services organization. Discussed below are the major observations noted and associated recommendations:

OBSERVATION 1 – **The current backup application and process does not effectively backup system configuration or application services for rapid restoration**. This could result in having to manually reconfigure servers and applications in an actual crisis event, significantly decreasing the effectiveness of the recovery process. Note: the same recovery application and process is in use across all Microsoft servers at the Technology Services data center. Although not tested as part of this exercise, these servers would likely be vulnerable to the same issues as the Tax server.

Recommendation – Immediately research, and update or correct the current backup application and process to provide a complete system backup and recovery capability.

Technology Services Management Response –

OBSERVATION 2 – **A robust solution to backup and recovery (Bare Metal) has already been purchased by the City of Denton**. As described by Technology Services personnel, Bare Metal has comprehensive recovery capabilities including both onsite and remote components.

Recommendation – Define a project plan and obtain commitment from the appropriate organizations at the City of Denton (such as Telecommunications) to provide the infrastructure for deployment of the Bare Metal solution.

Technology Services Management Response –

OBSERVATION 3 – **Current Technology Services BCP Plan documentation should be updated based on the analysis of the exercise**.

Recommendation – Several vital pieces of information were not available in the documentation during the exercise. These included the install key, serial key, and instructions to validate the size of the server partition. This information should be added to the appropriate procedure(s).

Technology Services Management Response –

OBSERVATION 4 – **Tax system specific parameters (and operating components) were not clearly documented**.

Recommendation – Although Anthony Caranna was able to rapidly identify which Tax System services were missing; the BCP documentation that the team was working from did not contain this information. One of the parameters of the exercise was to attempt this recovery without Anthony's involvement. It would have been very time consuming for the recovery team to attempt to ascertain this information on their own had Anthony been unavailable in an actual crisis event. It will likely be necessary to have specific recovery information for the Tax System along with general information

for recovery of a Microsoft Server environment in the BCP plan. If this is deemed a valid recommendation by the Technology Services leadership team, it may also be appropriate for other application servers in the environment.

Technology Services Management Response –

OBSERVATION 5 - **There was some level of confusion as to whether the BCP Plan should be utilized to address the Tax System outage**.

Recommendation – Several questions arose as to whether or not the BCP plan should be deployed, or if the recovery should be handled through normal operational procedures outside of the defined BCP plan. Clearly identify, define, and communicate to the Technology Services team when and how the BCP plan should be deployed (timing, pre-event declaration, post-event declaration, etc.).

Technology Services Management Response –

OBSERVATION 6 –**A Mission-Critical Process Continuity (MCPC) plan would be useful for disruptive events**.

Recommendation – In parallel with Observation #5 addressing when to deploy the actual BCP plan, it could prove useful to develop a MCPC plan addressing immediate response to a disruption… that may or may not develop into an actual disaster declaration event. Not all disruptions require "breaking the glass" and deploying the full BCP plan, and many organizations are designing an "event containment and process survivability" approach to minor incident management. The MCPC clearly parallels and a transition to the full BCP plan when appropriate, and provides onsite rapid response instructions that might negate the need to execute the full plan. A quick way to deploy MCPC capability might be to extract appropriate information from the full BCP plan and condense it into a "lite" version of the documentation containing, for example, information that would assist in rapid recovery of a failed server…in such an event as to where the defined Recovery Time Objective would not be exceeded in terms of system and application recovery.

Technology Services Management Response –

OBSERVATION 7 – **A BCP plan maintenance and enhancement protocol should be defined and deployed across the organization**.
Recommendation – Several of the team members commented that the "latest" version of the BCP plan was in the vault, not what was sitting on their desks. All plan copies should be kept current, and a procedure for effectively locating and updating all BCP plan copies should be considered.

Technology Services Management Response –

OBSERVATION 8 – **Data integrity should be validated upon restoration of the Tax System**.

Recommendation – Although not relevant to this exercise as the user acceptance was not possible, in any recovery exercise that completes to the point of user review and acceptance, there should be a specific effort to verify the integrity of the restored data. Although a match in file size of the source and target data files were evidenced in the Tax System recovery, validation of the data integrity was

not accomplished due to termination of the exercise…this should be included in subsequent system recovery tests.

Technology Services Management Response –

OBSERVATION 9 – **This specific exercise should be executed again when the backup application and procedures have been updated to ensure "peace of mind" in the viability of the process**.

Recommendation – The exercise resulted in a general state of concern for the recovery team and Technology Services leadership in the viability of the current recovery process. Although partially successful, the exercise should be repeated to ensure that the original five success criteria can be successfully met. Overall, the recovery team performed very well and effectively executed the recovery procedures everyone believed would yield success. To that end, this exercise should be considered extremely valuable in that it highlighted an unknown problem in the backup and recovery process that can now be mitigated.

Technology Services Management Response –

OBSERVER NOTES
Bobbie Arashiro, Assistant Technology Services Director

BCP Drill on April 7, 2006
Tax App Server Recovery

Steve's start time 8:44 AM

Lee is the floor manager—go to the vault and bring back what we need

Jim A says he will go to the vault—Lee tells Jim A to get the instructions---the book

Lee talks to User Support about the Tax problem

Lee Ann B comes to the User Support area----she is officially notified of the problem

User Support should continue to answer phones

Lee, MB & Brian check on which server to use and start looking at what needs to happen with the rebuild-----server has nothing

Brian said we will need the Microsoft CD's----Lee called Jim A to bring back the the MS CD's

8:55 AM: Lee gave Alex an update

9:00 AM: Brian asked John D where the DRP book was located---John told him he couldn't say

9:20 AM: Jim back with the vault tapes and book-----MB gets Lee

MB & Brian are working together
Brian starts looking @ the BCP book and CD's
MB & Brian start talking about what to do

9:25 AM: Booting the replacement server

Jim A asked the question----which server the production tax system really runs on and which back up job

Lee goes and asks Jim B which server tax runs on

Brian & MB looking at server and deciding which CD's----asked Lee for help---use 2000 server CD's

Brian used the book as a reference

DHCP-----MB asked Lee and Lee asked Jim A
It was decided to use a static IP---Lee went to get the address
MB & Brian are waiting on Lee
Lee couldn't get the IP, needed Jim A

9:36 AM: Received the IP address
Starting the install-----MB stepped up and was the driver

All working together and talking thru the install

Brian kept going back and checking the BCP book

Make sure the install key for Microsoft is available---need to write the key on the CD Sleeve

Need serial # key----------located on the top of the server
Need to record the keys in the book

This servers' key was not on the top of the server-------Jim A had a key on his Palm device—used that key and continued the install

Backup exec was not part of the Windows kit

MB, Brian and Lee were working good together

10:20AM: Re-booted sever after the OS install

Began reading the BCP book for backup instructions
Need to update the backup instructions in the book

Jim A needed to push the backup agent to the server

Brian began looking in the book for the time tax indicated they needed to be back up

10:35AM: Backup agent is installed—rebooted server

What to restore for Tax----Brian and Jim A started looking in book
Called Jim B as a resource

10:48 AM: Jim A, Jim B, MB & Brian decided what to restore

Jim A started making room on the tape magazine for the restore tape

Jim A needs to modify the tape restore procedure

11:22 AM: Restore failed----partition space issue

Had to call Anthony for a solution
Anthony's options were to use Partition Magic or go back and start over and make sure to partition the drive large enough

It was discussed to check the restore job before starting the restore procedure to make sure there is enough space allocated

The drive was created as basic instead of dynamic

Tried Partition Magic---didn't work

11:40 AM: Started the install over from scratch
Jim B, Lee, Brian, MB and Jim A

During the install, partitioned to use the whole server----add to documents

11:45 AM: Lee went and gave Alex an update

MB took over the console and finished the install
MB, Brian and Lee stayed together and worked thru the install

12:20 PM: Ready to load backup agent---Lee went an got Jim A

12:30 PM: Restore re-started

1:05 PM: MB checked on the restore---56% complete

1:20 PM: MB checked on the restore---72% complete

1:26 PM: MB checked on the restore---81% complete

1:50 PM: Jim A, Brian & MB-----restore 100% complete

EXERCISE STOPPED

User Support contacted Tax to get off system

1:55 PM: Anthony is re-booting server for the flip flop

2:00 PM: App F is offline
re-booted server----------THIS DID NOT WORK

This didn't work because we didn't do a complete restore with the system state and all the partitions. We only did the data.

2:12 PM: User Support contracted Tax that they could resume their production work.
2:15 PM: Restarted restore

3:00 PM: MB checked on the restore---62% complete

3:30 PM: Restored 100%---no skipped or corrupted files

User Support called Tax

Brought server down

Rebooted server we configured

Data is there, not all services were restored

4:00 PM: can't bring up DRP server without effecting Production server

DISASTER RECOVERY TEST *EXERCISE OVERVIEW*

Introduction

Welcome to the *unannounced* Disaster Recovery Test for the City of Denton Technology Services organization!!

The exercise is designed to be initiated and completed on ***February 19, 2007***. Dr. Steve Timmons will observe the exercise and document results for the Technology Services leadership team.

SCENARIO DESCRIPTION

This morning the Groupwise Mobile System experienced a hard server failure that effects high profile users, including the City Manager and Mayor. Neither the production server – nor the data that was on the server is available. In addition, the backup tapes run for this week are available, but the backup hardware is not available and replacement hardware must be found from existing servers not in production. John Durnell is the Lead Manager and the only management team representative available for the duration of the exercise.

Technology Services standard protocols for recovery of the GroupWise Mobile System should be utilized. In addition, following the completion of this kickoff meeting, no one participating in the exercise should seek direction or assistance from Alex Pettit, Bobbie Arashiro, Anthony Caranna, or any member or the Technology Services leadership team (this restriction is inclusive of John Durnell).

The exercise officially begins at the completion of this kickoff meeting.

EXERCISE EVALUATION & SUCCESS CRITERIA

Five primary objectives and associated success criteria have been defined by the Technology Services leadership team, and will be the basis for the evaluation. These will **not** be identified until the exercise has been completed.

Bobbie Arashiro, Technology Services Assistant Director, will provide limited additional information to exercise participants during this kickoff meeting. No additional information will be provided, and no questions should be asked. Exercise participants must complete the recovery process independent of management direction.

City of Denton Technology Services Disaster Recovery Test
GroupWise Mobile System Recovery
February 19, 2007

OBSERVERS GUIDELINES and CHECKLIST
(NOT to be provided to exercise participants!!)

9:00am Timed Exercise Scenario: GroupWise Mobile System Recovery

Expected Recovery Process:

- ❑ Tapes to be used are in Data Center from weekend backup, alternate backup tapes are in the vault and will be brought back in case primary backup tapes fail
- ❑ Notify GroupWise users via email that we have a problem
- ❑ Notify Help Desk about the problem
- ❑ Go to the vault to get tapes, Windows recovery kit, and backup exec IDR kit
- ❑ Jim Avery will perform exercise----if he is unavailable, MB Munday will perform exercise
- ❑ If MB performs the exercise, he will need Admin rights----will need to contact Manager (John Durnell)
- ❑ Show Jim or MB where server is to be used for recovery
- ❑ Install operating system
- ❑ Bring down production GroupWise Mobile Server
- ❑ Restore app server for GroupWise Mobile System on replacement hardware
- ❑ Reboot Server and verify network settings
- ❑ ***Have GroupWise Mobile user test for Treo 650 PDA***
- ❑ ***If user can login and see email, then exercise is over.***

STOP TIMER AND DETERMINE IF RECOVERY IS ACCOMPLISHED WITHIN DEFINED RECOVERY TIME OBJECTIVES

- ❑ ***Shut down replacement server***
- ❑ ***Reconnect production server to network***
- ❑ ***Notify GroupWise Mobile users that system is back up***

Objectives and Success Criteria

PLATFORM	OBJECTIVES	SUCCESS CRITERIA
GroupWise Mobile System	1. System recovery on Monday, February 19th	Full system recovery prior to close of business on Monday
	2. Recovery of the GroupWise Mobile System MUST utilize existing documented procedures without deviation	Existing GroupWise Mobile System recovery procedures were utilized (without deviation) and successful recovery was completed
	3. Recovery of the GroupWise Mobile System MUST be accomplished by assigned personnel without management direction or assistance	No direction or assistance was provided to the team by Alex Pettit, Bobbie Arashiro, or Anthony Caranna
	4. Outage notification and status reporting procedures are performed through the recovery exercise	The appropriate users and manager were notified of the outage and kept apprised of recovery status throughout the exercise
	5. Send email from GroupWise to see if user receives the email. Appropriate users review and sign-off on the recovery efforts	The users reviewed the restored system, ensuring that the application(s) are functioning properly and current data is available End user sign-off on a successful recovery was obtained

City of DENTON

TECHNOLOGY SERVICES

Technology Services City of Denton

601 E. HICKORY STREET, SUITE A ● DENTON, TEXAS 76205 ● 940-349-8562 ● FAX 940-349-8533

Memorandum

Date: **July 31, 2008**

To: **Bobbie Arashiro, Enterprise Architecture Manager**

From: **John Durnell, Applications Program Supervisor**

Subject: **DRP EXERCISE 7.25.08**

Background:

Annually, Technology Services tests the Technology Services Business Continuity Plan by simulation of an outage that in the event of a disaster would affect a large portion of the customers Technology Services serves. For this exercise, the Identity Management test server failed for unknown reasons and the goal is to restore the server as soon as possible in a reasonable amount of time. Identity Management for the organization keeps the users passwords in sync between the E-directory tree structure used by Novell and the Active-Directory tree structure used by Microsoft. Failure to keep these systems in syncronization results in users unable to authenticate to the network through Novell and access Microsoft applications through Active-Directory to conduct City business supporting the citizens of Denton.

Participants for this exercise were Jim Avery, Rob Keeley, and John Durnell. Jim Avery would act as the person to provide security level access to Rob Keely for network access for authentication to servers and backup media needed for the system recovery. Rob Keeley job would be to follow printed Microsoft Server Recovery procedures retrieved from Technology Services portion of the Technology Services Business Continuity Plan to recover the server to a usable state. John Durnell role in this exercise would act as procter to monitor events of the tests and document the results of the test. During the test no aid could be given Rob Keeley other than logging him in to the appropriate system to perform the recovery. Success of the test would only be achieved if the server was restored to completely with no loss of data or usability.

July 31, 2008
DRP Exercise 7.25.08
Page **2** of **3**

Technology Services DRP test started at 3 PM on 7/25/08.

Steps:

1. Hardware components of the server sub-sytems checked and passed diagnostic testing the problem seemed to be a problem with the operating system or application software loaded on the server.
2. Recovery media recovered from off site vault containing the lastest backup available and instructions regarding recovery instructions for Microsoft servers included in the Technology Services Business Continuity Plan stored in the vault. Media and instructions were recoverd the day before in preparation of the scheduled test. Roundtrip time to the vault is approxiamately 45 minutes.
3. Server IDTEST identified as menu pick 25 from KVM menu powered up to start the test by (ALT-CTL-DEL) key sequence from the keyboard.
4. Instruction on pg 1 step 5 indicated that the operator performing the test had to make a decision to re-boot the server because the server was not in a failed state thus the server had to restarted time 3:22 PM.
5. Instruction on pg 1 step 5e unclear as to weather Disk array should be formated. Formatting of the Disk Array needed when server fails hardware diagonistic tests.
6. Instruction on pg 1 step 5h requires proper IP address for server restoration for connection the the production network. IP address information is considered sensative information and was retrieved by Jim Avery and given to Rob Keeley.
7. Instruction on pg 2 step 6 needed Jim Avery to logon to MSBACKUP server and access Backup Exec software selecting proper backup file system recovery in this case the file selected was a restore from backup created 7 AM on 7/25/08. Use of this backup was needed and used as a benchmark to determine success of the restore procedure. Restore began 3:59 PM.
8. Instruction on pg 2 step 7 unclear as to when the recovery process is complete and assumes you have a situation for automated recovery. You have to answer NO to the prompt do you have more media to load. Used for multiple tape restore. In this instance, recovery from disk selected to verify that all files and directory structures from this backup are restored to the server.
9. Instruction on pg 2 step 9 reboot server. Server rebooted at 4:39 PM.
10. Windows Server 2003 splash screen displayed at 4:42 PM.
11. Server logged onto by Jim Avery at 4:45 PM.

12. Analysis of server directory structure and backup exec reporting verified all files and directories backed up from the 7AM backup on 7/25/08 matched the files restored to the server at 4:45 PM by John Durnell.

Memorandum

Date: **August 5, 2009**

To: **Bobbie Arashiro, Enterprise Architecture Manager**

From: **John Durnell, Applications Program Supervisor**

Subject: **DRP EXERCISE 8.5.09**

Background:

Annually, Technology Services tests the Technology Services Business Continuity Plan by simulation of an outage that in the event of a disaster would affect a large portion of the customers Technology Services serves. For this exercise, the Teleworks System providing information regarding utility bills, court citations, and building inspections would be the subject for a test scenario focusing on utility bill payment and inquiry services. The goal was to restore the server to a usable state from the last backup media stored in the vault in a reasonable amount of time. The assumption made was that the production server became unusable and backups would have to be restored to a dissimilar hardware server capable of operating in a Microsoft 2003 environment.

Participants for this exercise were Jim Avery, Rob Keeley, and John Durnell, however; Rob Keeley called in sick and John Durnell acted as proctor and recovery technician. Jim Avery would act as the person to provide security level access for the recovery technician for network access for authentication to servers and backup media needed for the system recovery. The recovery technician's task would be to follow printed Microsoft Server Recovery procedures retrieved from Technology Services portion of the Technology Services Business Continuity Plan to recover the server to a usable state. During the test scenario, no aid would be given to recovery technician other than logging him in to the appropriate system to perform the recovery. Success of the test would only be achieved if the server restored completely and the Teleworks application was functional in looking up utility bill payment information.

Technology Services DRP test started at 8 AM on 8/05/09.

Steps:

1. Hardware components of the server sub-systems checked and passed diagnostic testing the problem seemed to be a problem with the operating system or application software loaded on the server.
2. Recovery instructions for Microsoft servers backed up using Unitrends Windows Bare Metal solution included in the Technology Services Business Continuity Plan stored in the vault. Media and instructions were recovered the day before in preparation of the scheduled test. Roundtrip time to the vault is approximately 45 minutes. Unitrends recovery solution

provides for a DPU/DPV hardware solution using a Data Protection Unit and a Data ProtectionVault. Recovery media selected was from the July 26, 2009 "bare metal" backup.

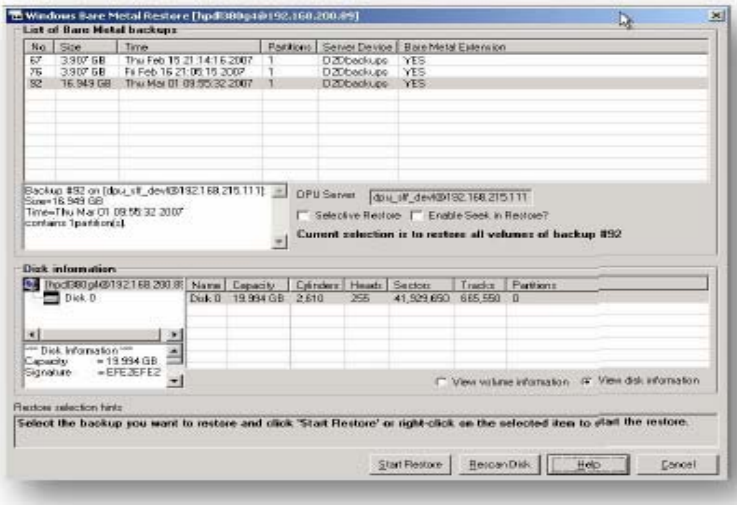
3. Dissimilar hardware on hand namely a Dell 1750 server recently retired but reserved for DRP testing..
4. Test began by mounting DRP to crash cart, booting up, and connecting to node within the network. Successful boot up of server occurred at 8:47 AM.
5. Following Unitrends Appliance User's Manual v 4.1 pages 329 – 334 a Windows Bare Metal restore began. Documentation continues as follows from Unitrends manual.

Unitrends™ Windows BareMetal

Dissimilar BareMetal Restore Process

Upon completion of the Windows BareMetal boot process, the Windows BareMetal graphical user interface will be displayed. Use the Windows BareMetal GUI to enable and configure the Dissimilar BareMetal settings.

From the Windows BareMetal GUI select BareMetal Restore. This will load the restore GUI which identifies all the backups currently stored on the DPU. Select one of the backups (normally the most current one is chosen).



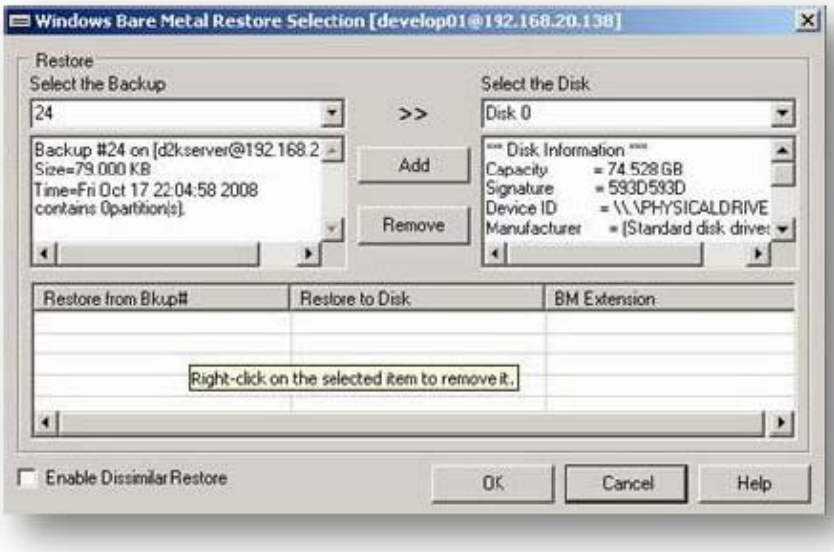
Unitrends™ **Windows BareMetal**

Check the **Enable Seek in Restore** checkbox to speed up the restore by only sending data to the client, skipping unused sections of the disk. Start the restore by clicking on **Start Restore**.

If the **Selective Restore** checkbox is enabled, a list of all partitions that have been backed up for the selected disk will be displayed. A single partition or multiple partitions may be selected for restore. However, for the selective restore of an individual partition, the partition must be created prior to starting the restore.

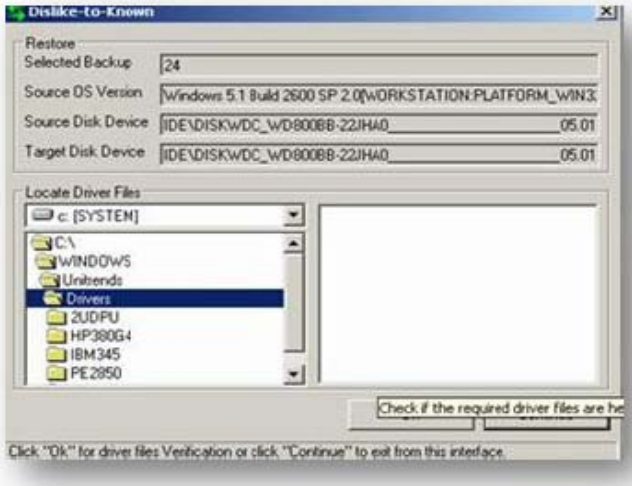
Select the appropriate options for the desired restore operation and click the **Start Restore** button for additional details and to initiate the restore.

Note: *A BareMetal backup cannot be restored to a smaller disk.*



Select the backup and disk to be restored and click the **Add** button. To enable the Dissimilar BareMetal feature, select the **Enable Dissimilar Restore** checkbox. If Dissimilar BareMetal has been enabled, the interface to locate the appropriate drivers and specify the source and target systems will be launched. Select the known platform that you are restoring to from the list as shown in the figure below. Then click on OK to continue with the verification of the driver files.

Unitrends™ Windows BareMetal



A message will be displayed to acknowledge the success or failure of the driver file verification.

If the driver file verification was successful, select the OK button to continue with the restore and the injection of the necessary driver files.

In the event of a failure, select the OK button to locate and verify drivers in a different location.

Unitrends™ Windows BareMetal

Upon successful completion of the restore, the following message will be displayed.

Quit the BareMetal Restore GUI and reboot the server with the Windows BareMetal CD removed from the server.

Dissimilar BareMetal Post-Restore Driver Injection Process

If the mass storage device driver used to restore the BareMetal backup was incorrect, the Driver Injection option can be used to inject a driver for a mass storage device into a restored client's registry without having to run another full BareMetal restore.

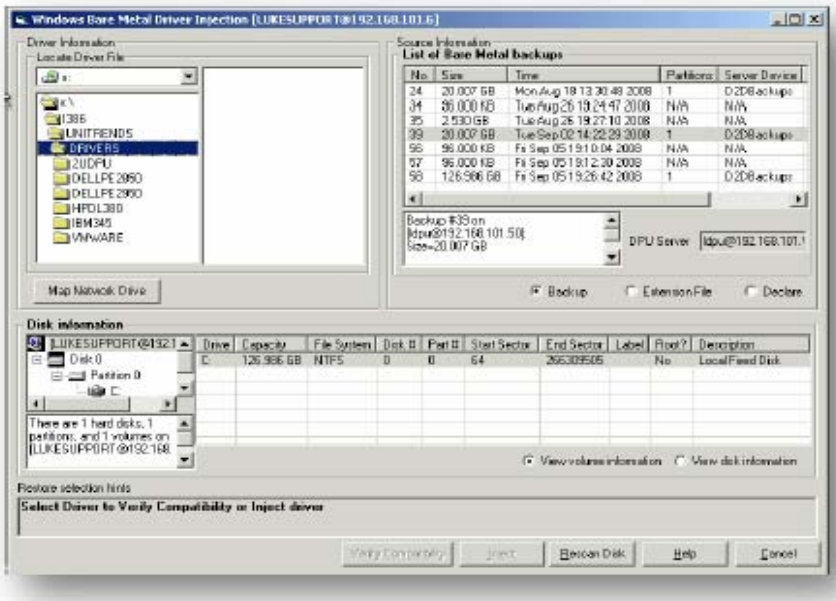
Unitrends™ Windows BareMetal

The Operating System, Service Pack and Hardware Architecture must be known before a driver injection can be performed. This information can be retrieved from an existing BareMetal backup, a BareMetal backup extension file or it can be declared.

The Logical Disk and Volume information provides browsing for target selection. This list is presented with devices that the WinPE BareMetal media is able to identify and mount properly. A logical disk and volume must be chosen where an Operating System exists.

Unitrends™

Windows BareMetal

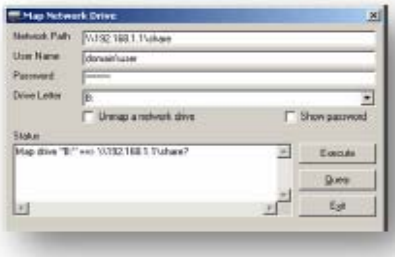


The **Verify Compatibility** option performs validation of the driver in the directory chosen against the selected target.

The **Inject** option performs the injection of the driver. The driver is first validated then injected in the client server's registry.

The **Rescan Disk** option performs a hardware scan to locate client disk drives and rebuilds the target selection options.

The **Map Network Drive** button allows you to map a network share that contains the correct driver.



6. Restore process finished at 10:32 AM.
7. Recovery server booted on-line at 10:47 AM.
8. Teleworks application tested but failed to access Utility billing information.
9. Customer Care support center for Teleworks contacted at 11:22 PM for aid in explaining why application would not access Utility billing information.
10. Teleworks logged in to trouble shoot the application at 11:45 PM.
11. In an E-mail sent at 12:38 PM stated that the recovery server Teleworks application failed for the following reason. The port licenses are tied to the hardware (network card and mac addresses) to keep people from improperly reusing licenses. This is a Voxeo standard. If this system you want to have up and running in a hot failover type of setup, we definitely have licensing and server management ramifications to consider. To recap my previous message: Upon logging into the server, I was presented with a dialogue box which explained that there had been some major hardware changes since the operating system was installed and that the version of Windows needs to be activated within 3 days. Additionally, Voxeo reported that there was no licensing in place for the ports on the system and then prompted for licensing.
12. In the event of a real disaster, license keys for the software based on hardware installed would need to be generated by Teleworks and Windows operating system would need to be activated to make the application fully functional. Nevertheless, an existing highly critical application Teleworks was restored on server hardware available. Analysis of server directory structure on test server and recovery server resulted in all directories and files being successfully restored.
13. Disaster Recovery test ended at 2:25 PM with recovery server disconnected from network and Teleworks deployment server reconnected.

(Note: In this particular exercise, the dissimilar server being utilized required that the LSI disk controller drivers be used in order for the server to boot the Windows operating system. This driver was selected during the restore configuration process as noted on page 5 of 10.)

601 E. HICKORY, SUITE A. DENTON, TEXAS 76205-4305•(940) 349-8562 •FAX (940) 349-8533
TECHNOLOGY SERVICES

Memorandum

Date: **2/23/2010**

To: **Bobbie Arashiro**

From: **Jim Avery – Database Administrator**

Subject: **DRP activity – server CODVORAA**

Windows server CODVORAA contains the new JD Edwards installation and is currently being used in a non-production/test environment. A change was made to a data folder which overwrote the contained test data with live data in some data tables, and thus the database became unusable.

The request was made to restore the contents of the E:\ORADATA\PY811 directory to a prior state in order to allow the server to continue to be utilized in its capacity for testing and development.

The server is currently being backed up utilizing the Unitrends DPU and DPV with a Master (full) backup scheduled for Saturday mornings at 0330 hrs, with daily incremental backups scheduled at the same hour.

Once the backup is complete on the DPU, the differences (deltas) are then transferred to the DPV for vaulting and archiving. (FIFO)

It was determined that the test data was overwritten on February 11th, and that a restore of the master backup from February 6th would recover the server to a usable state.

Once that was determined, I logged in to the Unitrends Rapid Recovery Console (https://10.5.6.150/recoveryconsole/,) expanded the DPU icon in the left-hand screen, and selected the server CODVORAA, selected a data range and backup instance on the right-hand screen. Selecting the 2/6 Master brings up information about the backup and whether

it's usable as a restore point. Clicking "restore" further opens a "Restore selection" window from which may be selected the drive letter, folder, sub-folder, or file which needs to be restored. At the bottom of that screen are two expandable selections which allow changing the file exclusion and advanced execution options.

Expanding the E: drive letter to select the PY8111 directory from E:\ORADATA and then clicking "restore" begins the process of restoring the data, in this case with the program defaults of "Preserve directory structure," and "Overwrite existing files."

Restore of 52.96GB of data from the Unitrends DPU to CODVORAA to a total of 13 minutes and a few second.

TECHNOLOGY SERVICES

601 E. HICKORY, SUITE A. DENTON, TEXAS 76205-4305•(940) 349-8562 •FAX (940) 349-8533

Memorandum

Date: 8/31/2011

To: Bobbie Arashiro

From: Jim Avery – Application Architect II

Subject: Server recovery exercise - 2011

After determining that there was a need to expand the disk capacity of Windows server BESERVER1, which is the Central Administration Server of a two-server Backup Exec installation, a pair of 143GB HDD's was purchased. Relying upon memory rather than actually checking the configuration of the disk installation on that server, and believing that it was configured as just a mirrored pair (RAID 1), I removed drive 0, replaced it with a newer, larger drive, and *killed* the server. It was not configured as a RAID 1, it was configured as a RAID 0, and consequently the removal of half of its brain caused the server to become non-responsive and non-recoverable despite the reinsertion of the original drive.

As this is a backup server, and the Central Administration Server as well, there was no way that I could restore it to itself utilizing Backup Exec. I had, however, at a time in the past utilized the Unitrends DPU to make a bare-metal backup of BESERVER1, just in case. The case had arisen.

I was able to create a bare-metal restore bootable CD from the backup on the DPU, and after replacing both of the HDDs in BESERVER1 with the larger capacity disks, and configuring it, this time, as a RAID 1 installation, booted the bare-metal CD, and restored the operating system, its configuration, and an older version of Backup Exec to BESERVER1. Once that was restored to the server, the server was rebooted, and repatched (via Microsoft Update) to current patch levels. The disk configuration was also expanded to utilize all of the now larger disk space.

I had also created a master backup of BESERVER1 on the Unitrends DPU that was newer than the bare-metal backup, and restored that backup to the now functional server which prevented me from having to manually enter all of the Backup Exec configuration information, as well as having to recreate all the existing backup jobs.

After that was completed, I was then able to update the Backup Exec software to its current version and configuration.

I have since configured a weekly master backup of both Backup Exec servers (BESERVER1 and BESERVER2) on the Unitrends DPU in order to save time and effort in the event that something happens that requires the backup servers to be restored. I also update the bare-metal backup on making significant changes to the servers as well, but that's a manual process.

TECHNOLOGY SERVICES

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Memorandum

Date: 5/18/2012

To: Bobbie Arashiro

From: Jim Avery – Application Architect

Subject: Server Recovery - 2012

Thanks to a truly "interesting" upgrade from Backup Exec 2010 to Backup Exec 2012, it became necessary for me to once again recover my primary backup server to a previous configuration.

As I mentioned last year, I have taken steps to ensure that I have much more current backups of my backup servers than I had available to me last year, and that process came in very handy this time.

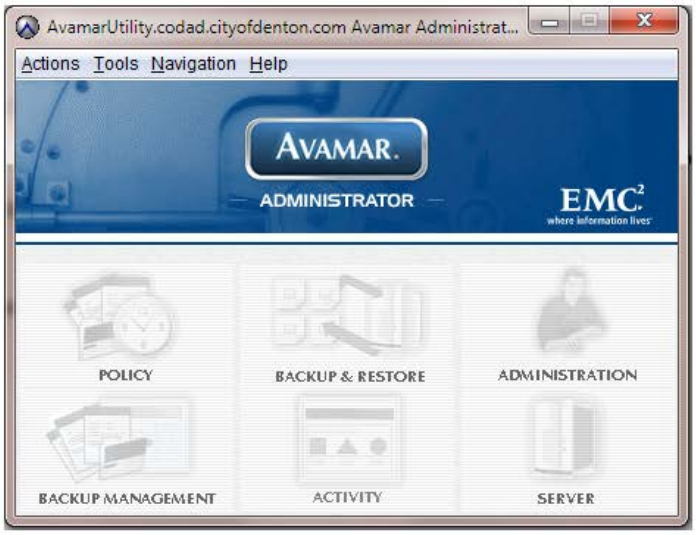
On April 9th, prior to upgrading Backup Exec 2010 to Backup Exec 2012, I made sure to take both a new bare-metal and a master backup of the primary Backup Exec server – BESERVER1. Unfortunately, the upgrade process blew up after having made unrecoverable changes to the BE database, as well as completely replacing the Backup Exec application. The only solution was to restore the server to its prior state, and that was done as a bare-metal restore from the bare-metal and master backups of that day.

The bare-metal CD was booted in the server; the appropriate bare-metal backup (presented in the menu) was selected and restored to the server. Once that was completed, I was prompted to restore the latest master backup which then brought the server back to its original functionality, allowed me to make some changes to its now restored configuration, which then allowed successful completion of the upgrade to Backup Exec 2012.

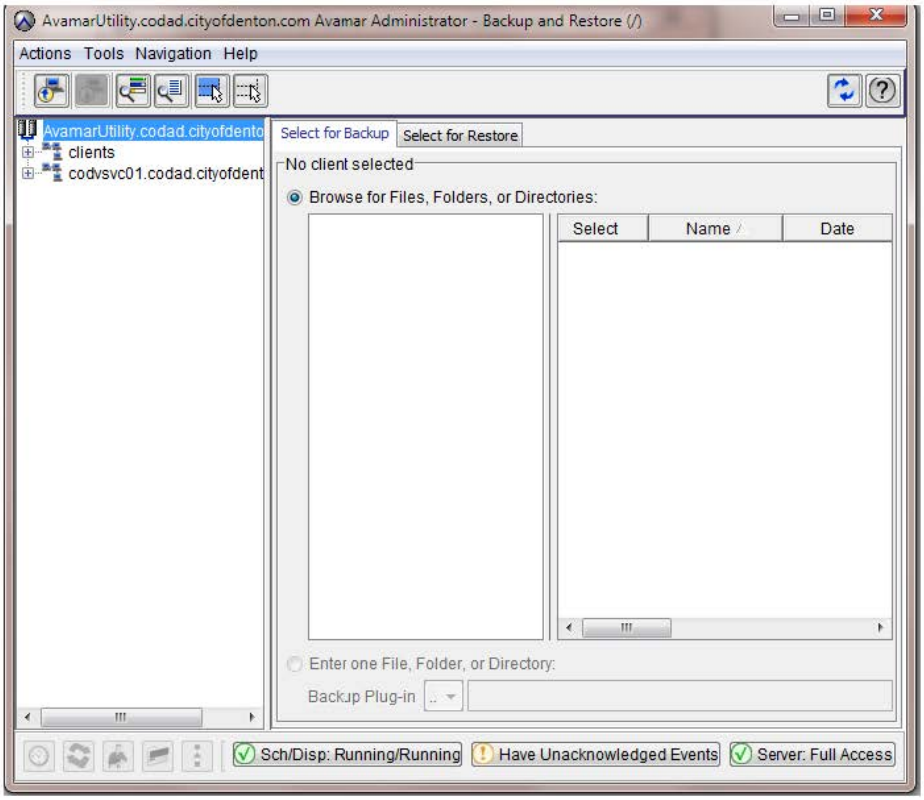
BCP Exercise – July 2013

Restore Avamar image backup of Harris Northstar Java Web Server to new VM and verify its operation.

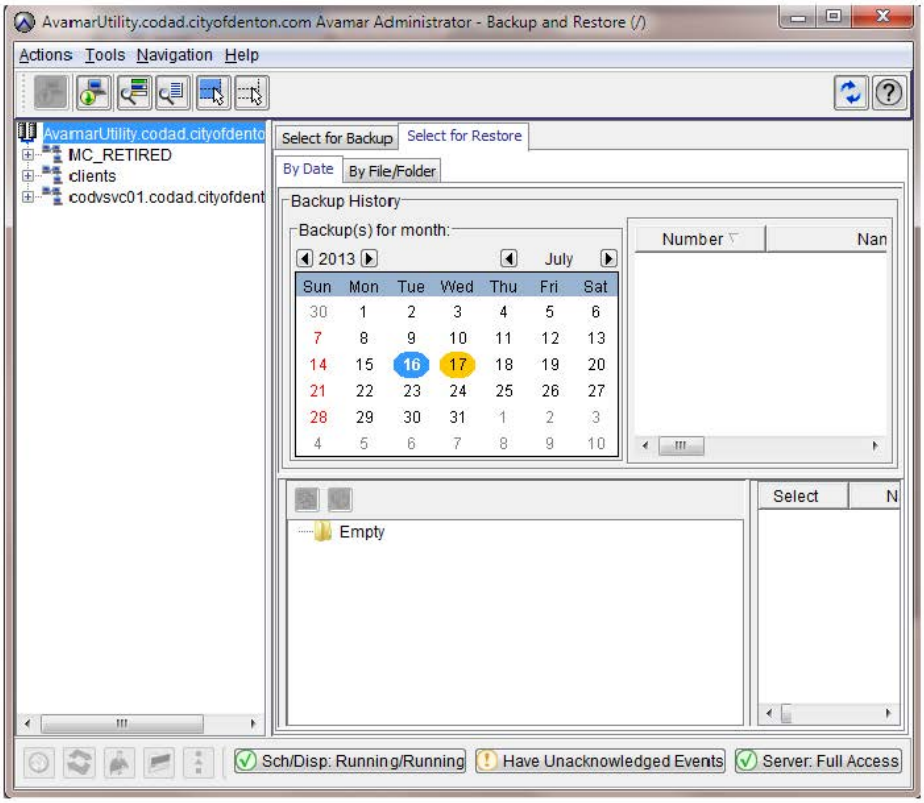
Login to Avamar Administrator



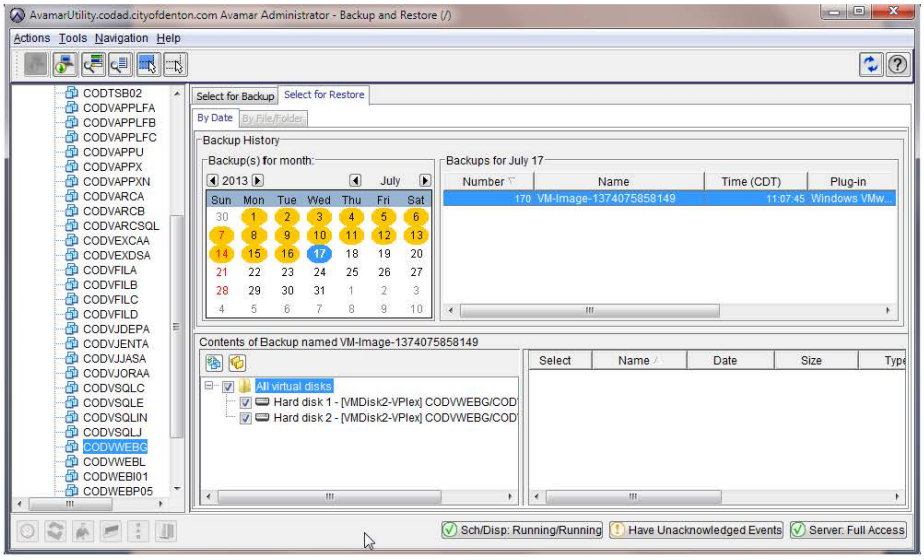
Select **Backup and Restore.**



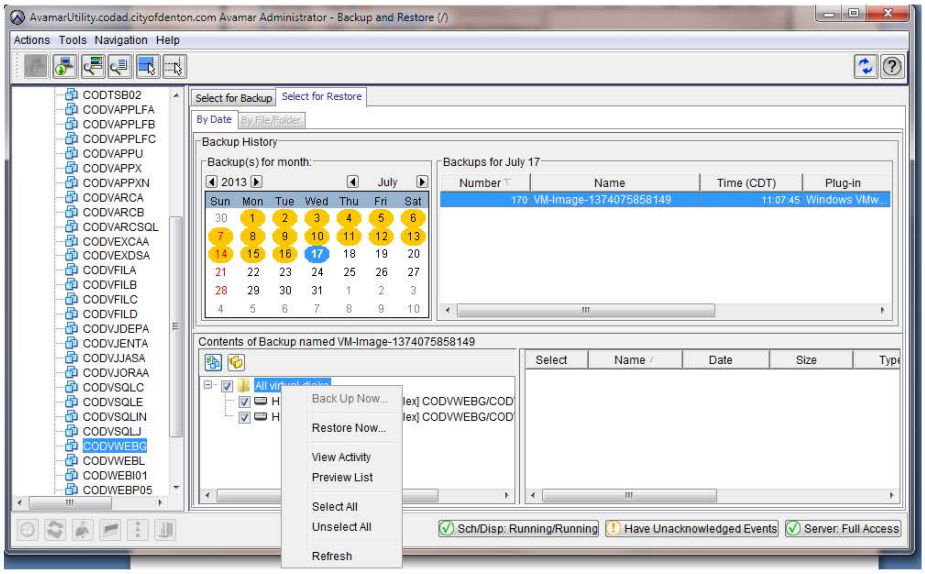
Select **Select for Restore.**



Expand server selection in left-hand window to select the server that you wish to restore, the date of the backup to restore, and the backup itself.

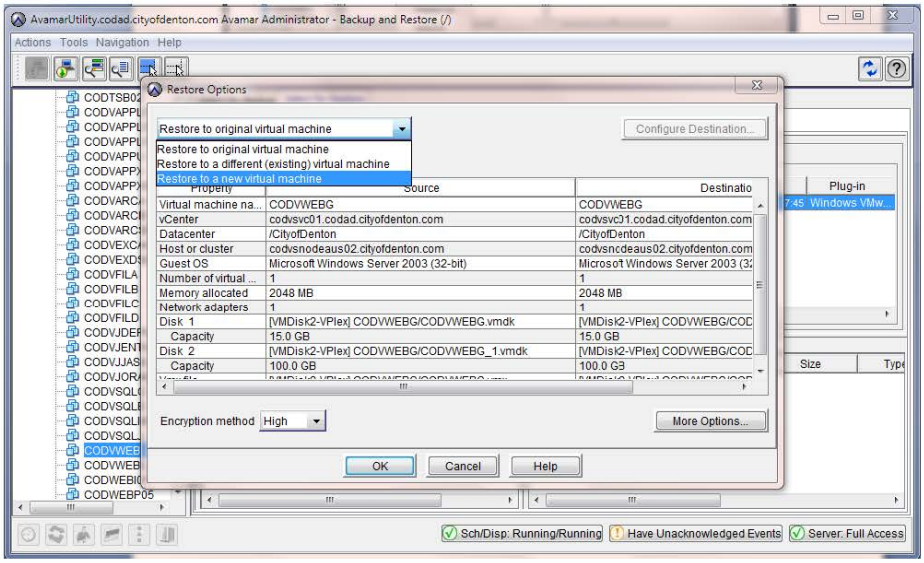


Right-click on the selected backup and click **Restore Now**.

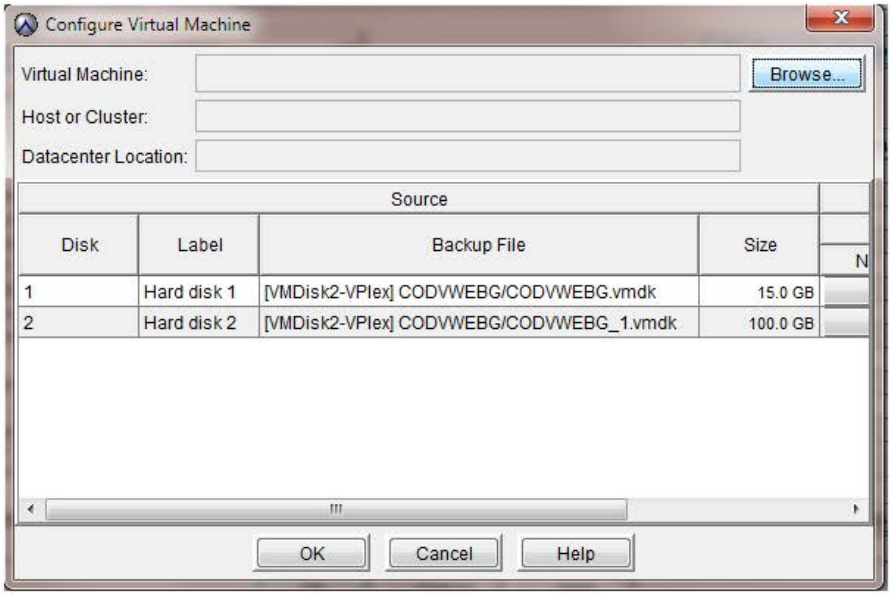


Restore Options will now open and you may select to restore to original VM, an existing VM, or to a new VM.

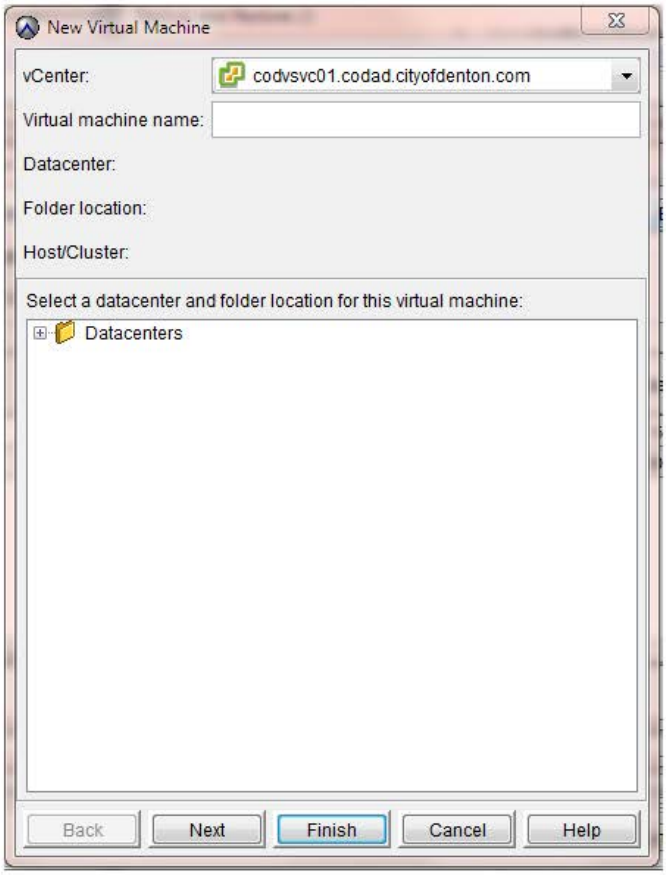
Select **Restore to a new virtual machine.**



Click **Configure Destination,** and the **Configure Virtual Machine** dialog box appears.

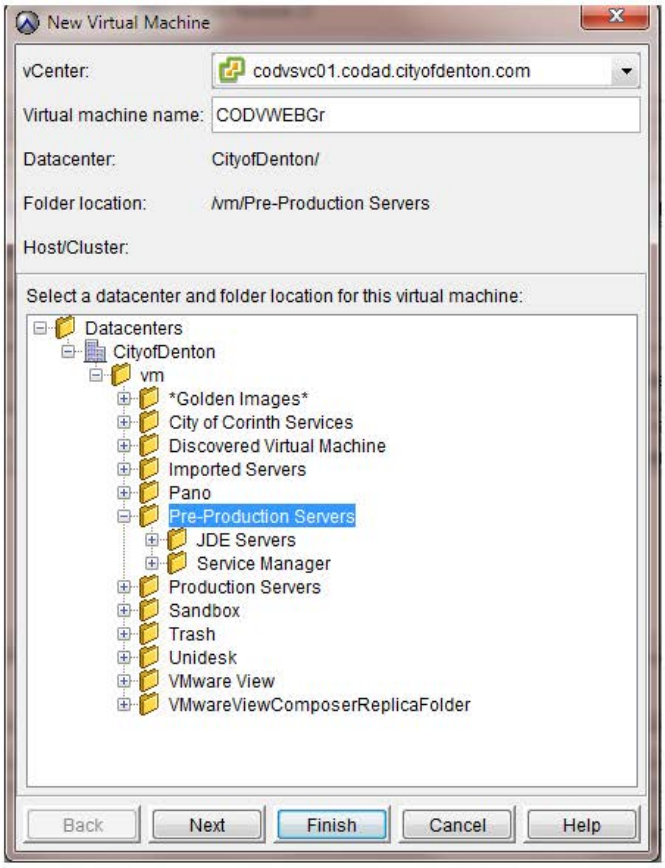


Click **Browse,** and the **New Virtual Machine** wizard appears:

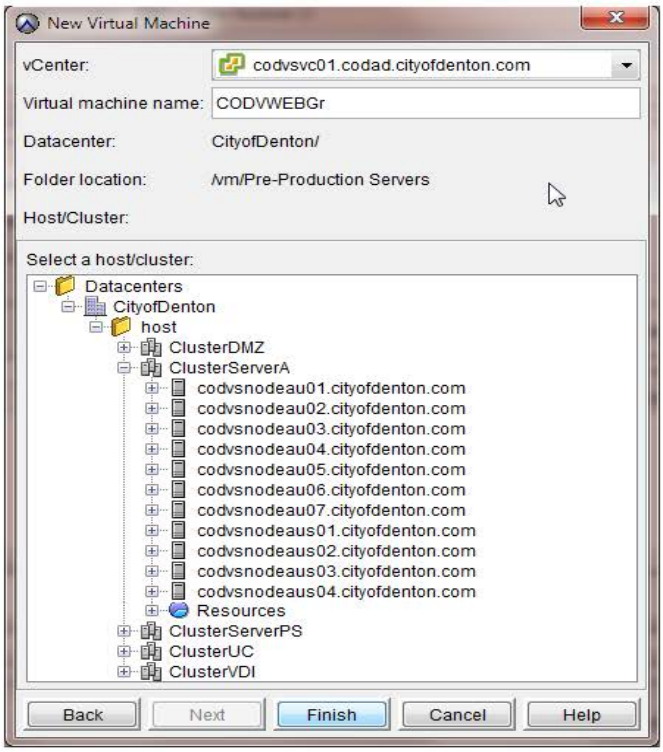


Type a name for the new virtual machine in the **Virtual Machine Name** field.

In the tree, select a datacenter and folder location for this new virtual machine.



Click **Next** and the next New Virtual Wizard screen appears.



In the tree, select a host/cluster location for this new virtual machine.

Click **Finish.**

The New Virtual Machine wizard screen closes.

Switch to Configure Virtual Machine dialog box and click OK.

The Configure Virtual Machine dialog box closes.

Switch to Restore Options dialog box.

Select the encryption method to use for client/server data transfer during the restore. (Shouldn't change.)

Click OK

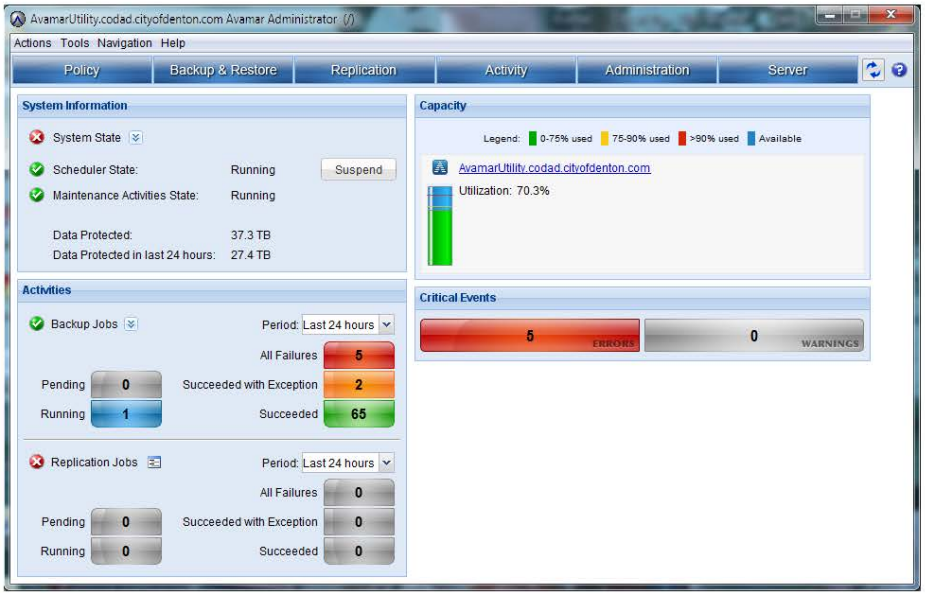
Restore Initiated

From Activity screen:

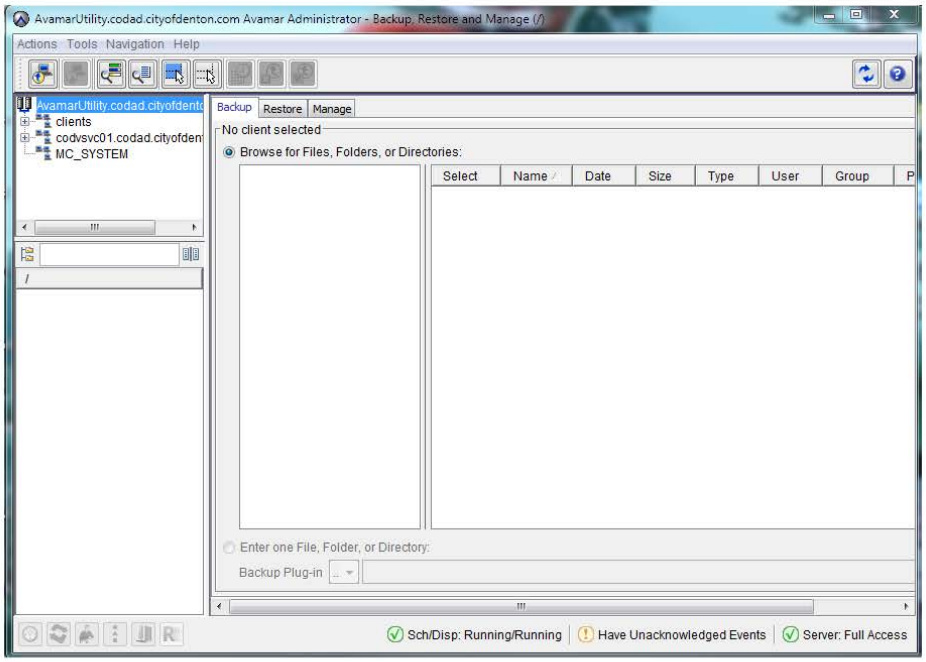
BCP Exercise – April, 2014

Recover corrupt SQL databases located on drive E: of server CODVSQLIN.

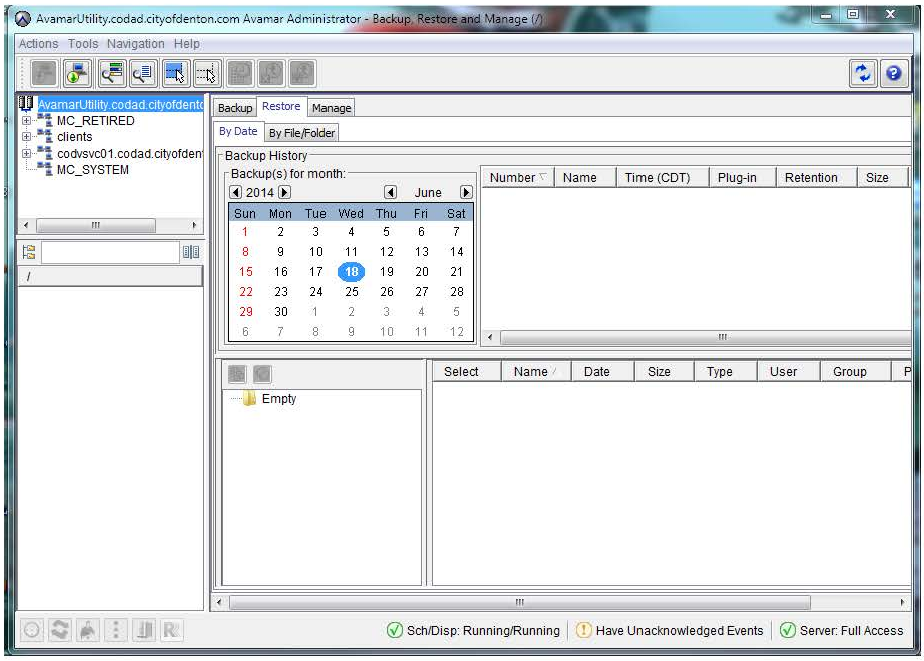
Login to Avamar Administrator



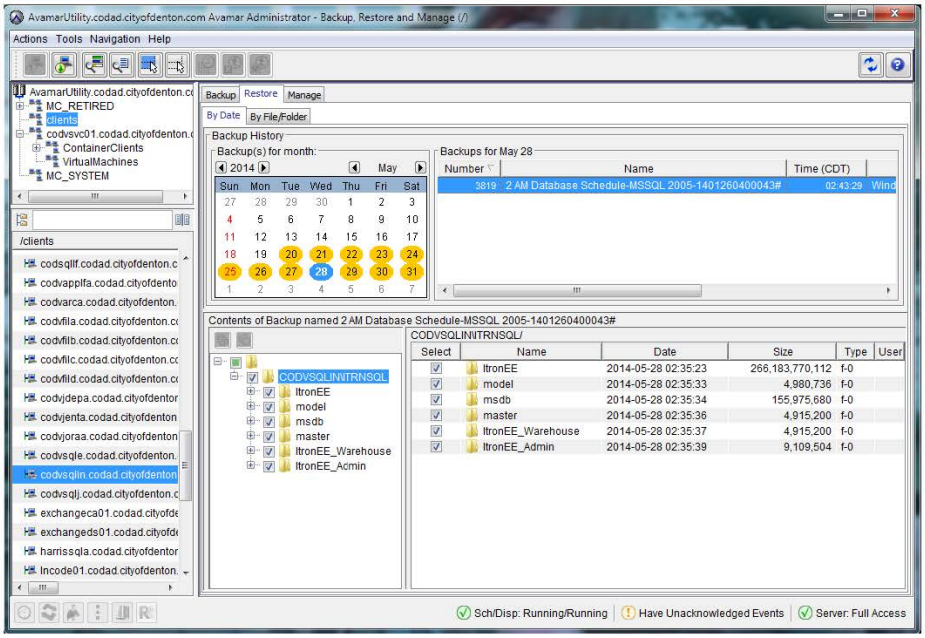
Select **Backup and Restore**.



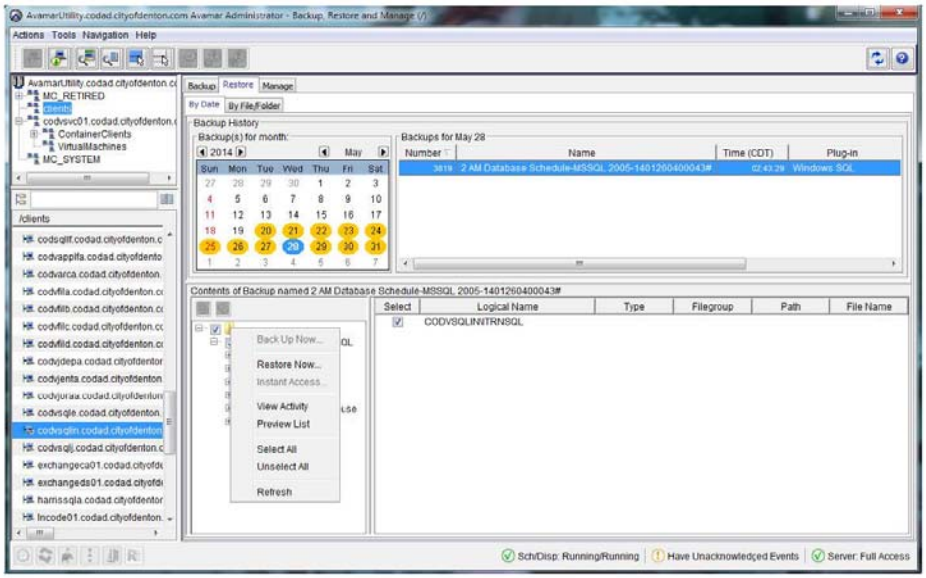
Select **Restore**.



Expand server selection in left-hand window to select the server that you wish to restore, the date of the backup to restore, and the backup itself.



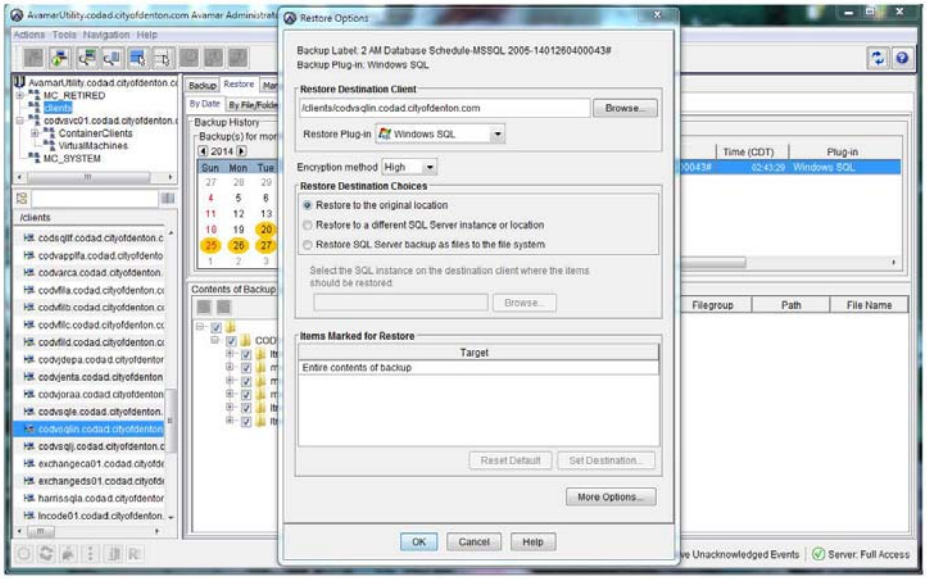
Right-click on the selected backup and click **Restore Now.**



Restore Options will now open and you may select to restore to the original location, a (in this particular case) different SQL server or instance, or restore SQL backup as files to the file system

Select **Restore to the original location.**

Click **OK** to begin the restore process.

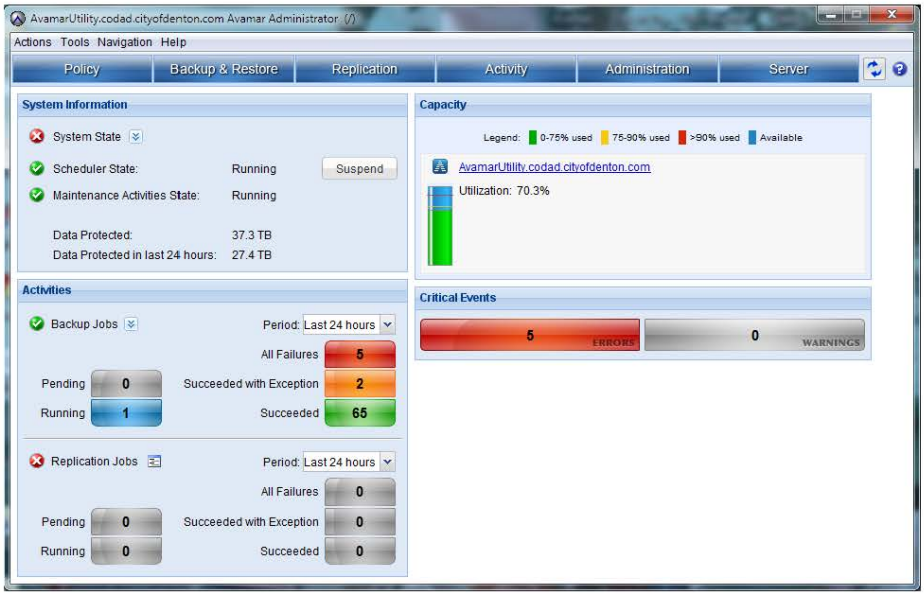


Once the restore is completed, all that is necessary is to restart the server or the SQL instance and the restored SQL data will be available to the users.

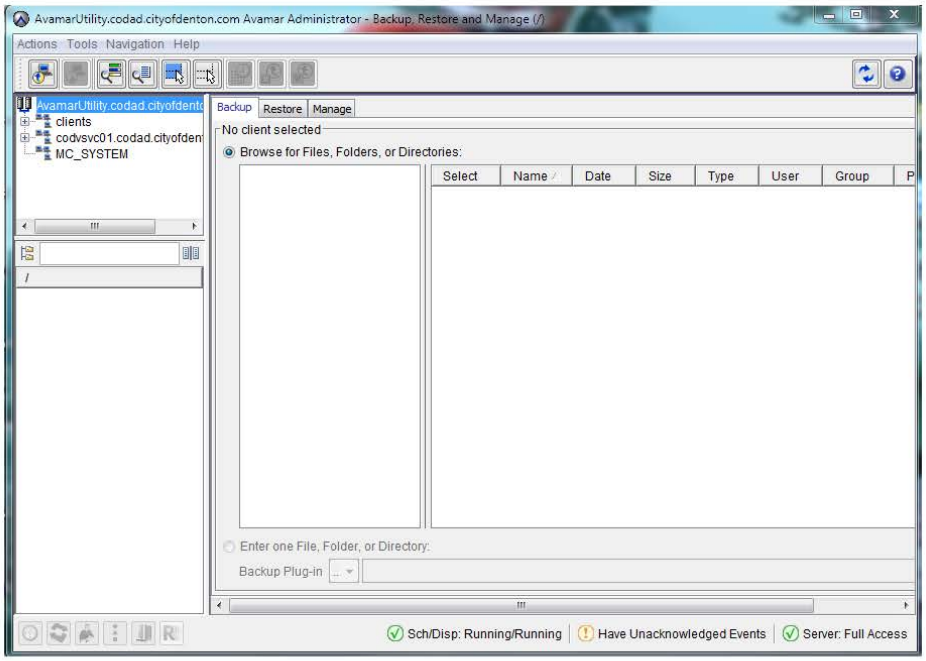
BCP Exercise – April, 2015

Recover corrupt SQL databases located on drive E: of server ProjDoxSQL01.

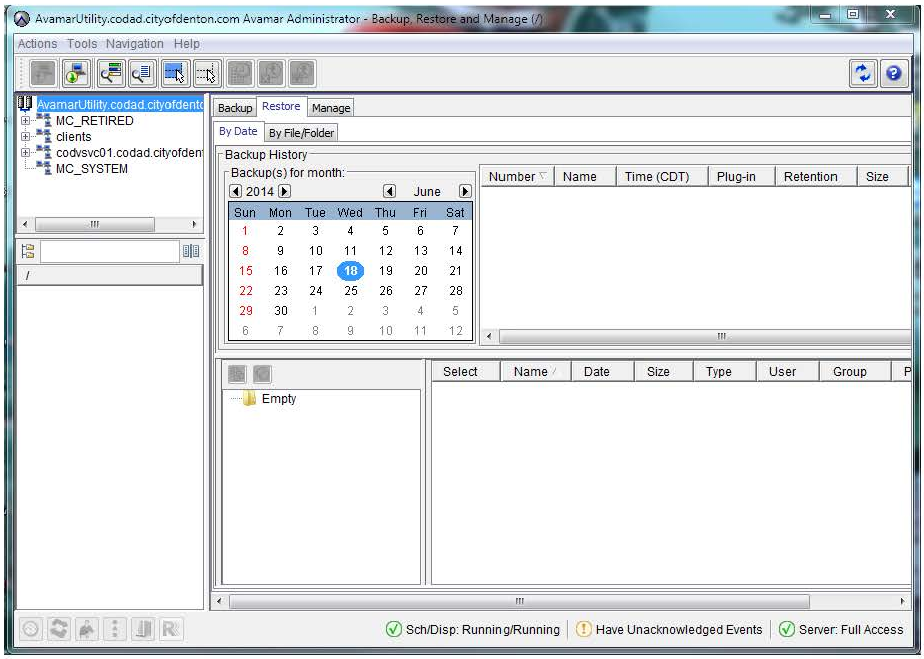
Login to Avamar Administrator



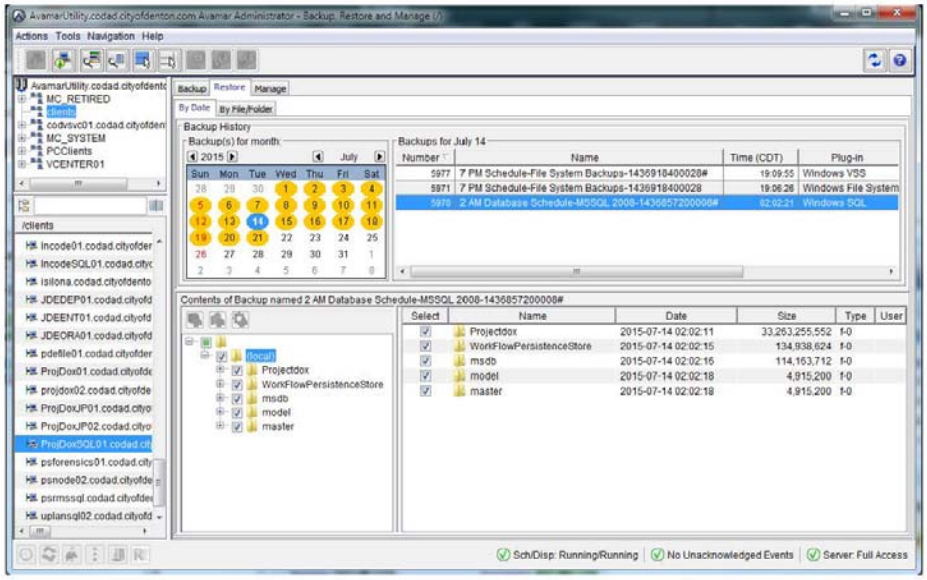
Select **Backup and Restore**.



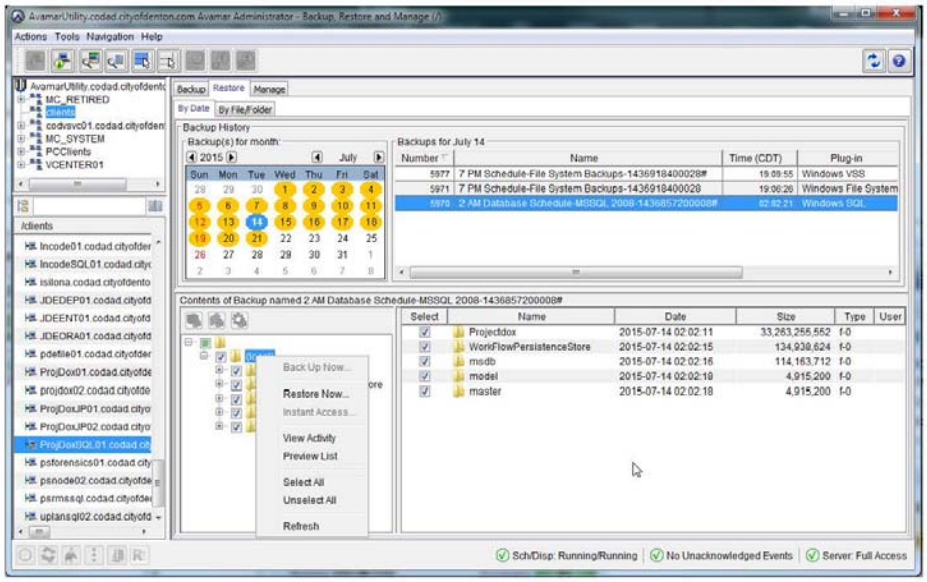
Select **Restore**.



Expand server selection in left-hand window to select the server that you wish to restore, the date of the backup to restore, and the backup itself.



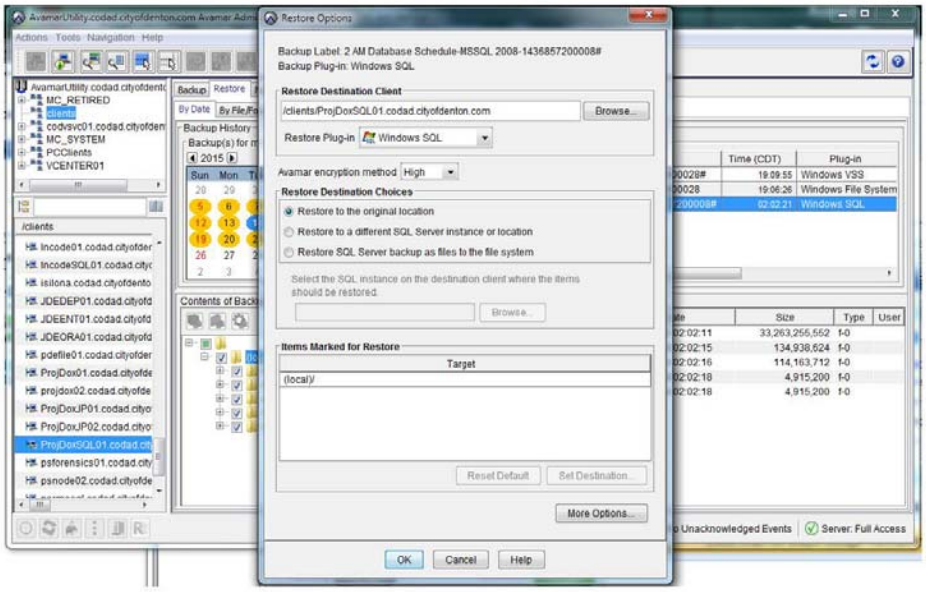
Right-click on the selected backup and click **Restore Now.**



Restore Options will now open and you may select to restore to the original location, a (in this particular case) different SQL server or instance, or restore SQL backup as files to the file system

Select **Restore to the original location.**

Click **OK** to begin the restore process.



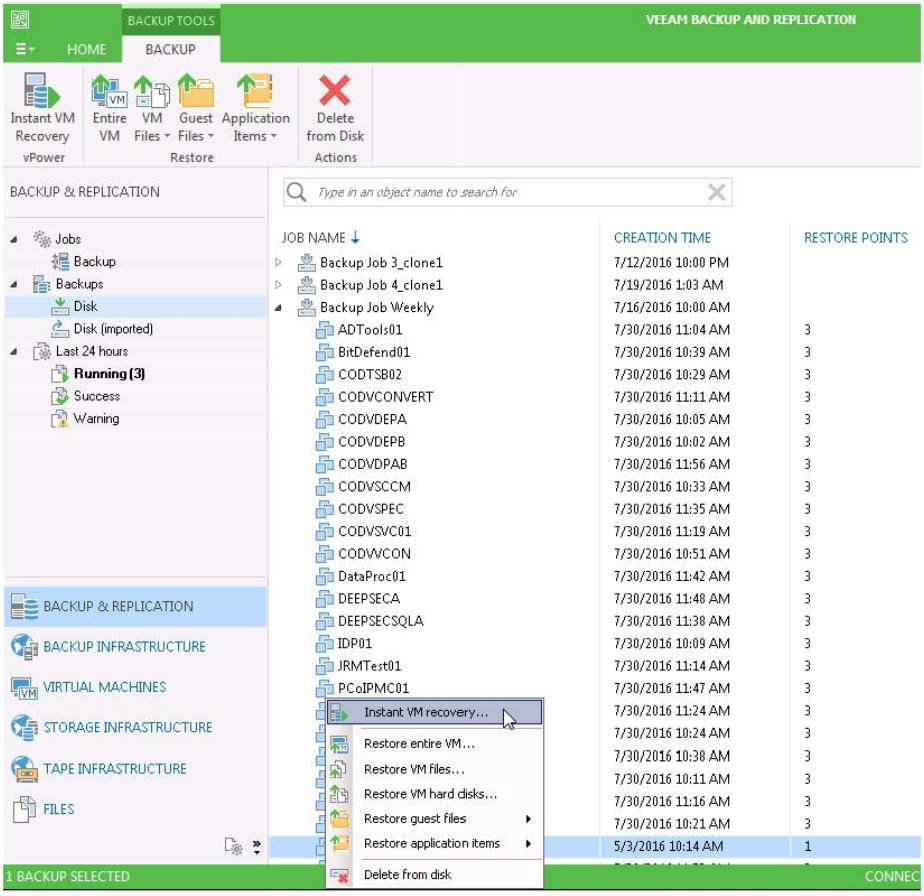
Once the restore is completed, all that is necessary is to restart the server or the SQL instance and the restored SQL data will be available to the users.

BCP Exercise August 5, 2016

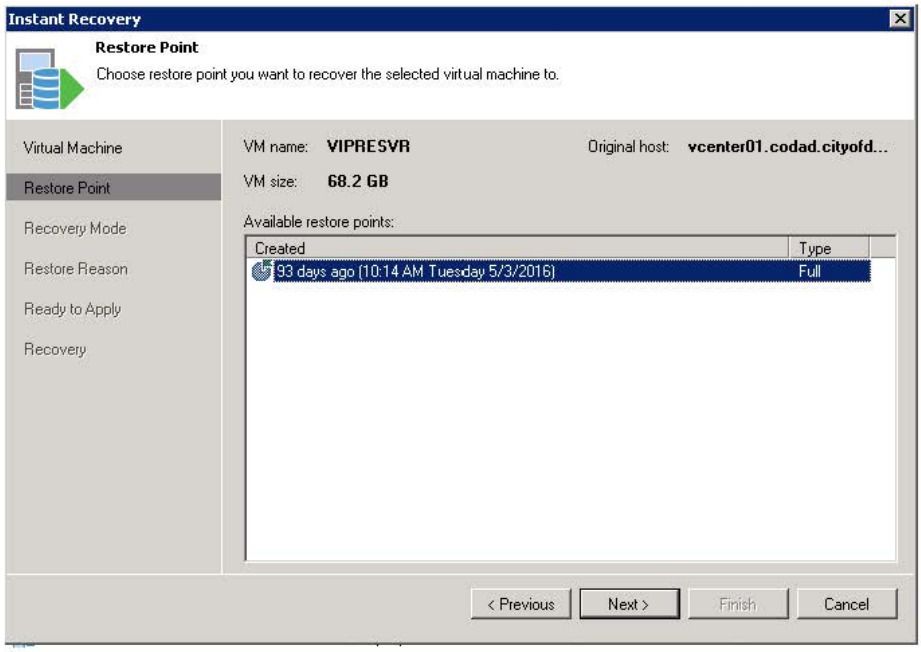
For purposes of this exercise – the restore of a complete virtual server, I have selected a server that has been decommissioned and removed from production, supposing that there may have been critical information that needed to be recovered.

SO:

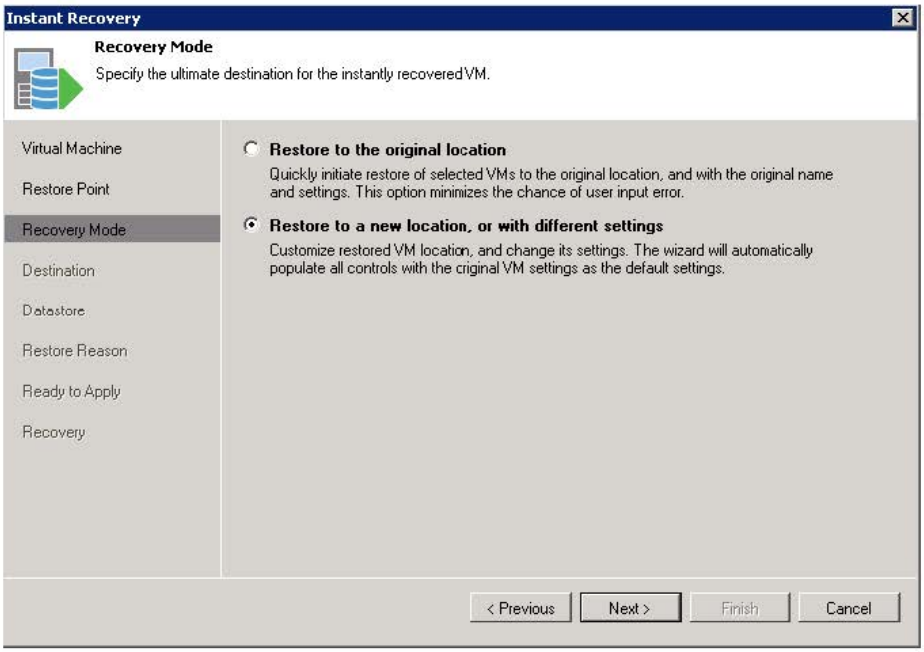
First, login to the Veeam console, select the server to be recovered from the backups on disk:



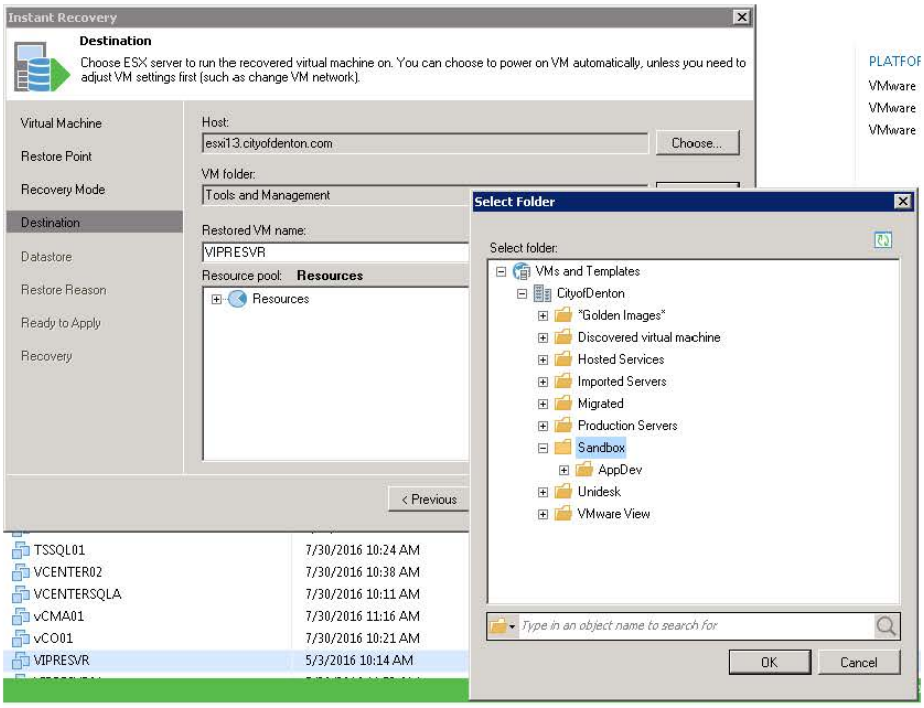
Next, select the restore point. (In this particular case, there's only one.)



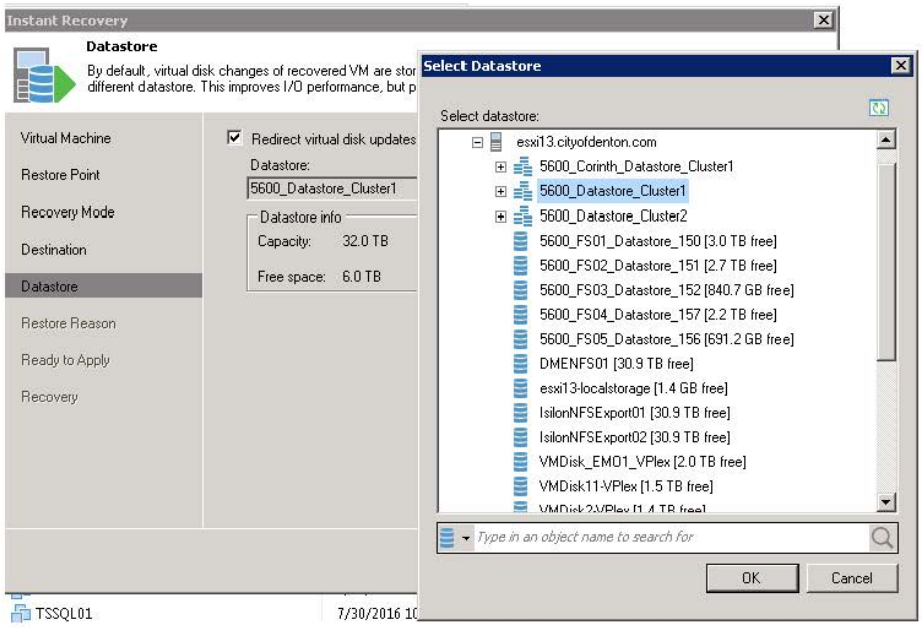
Click "Next" and select the appropriate location; in this case, again, a new location:



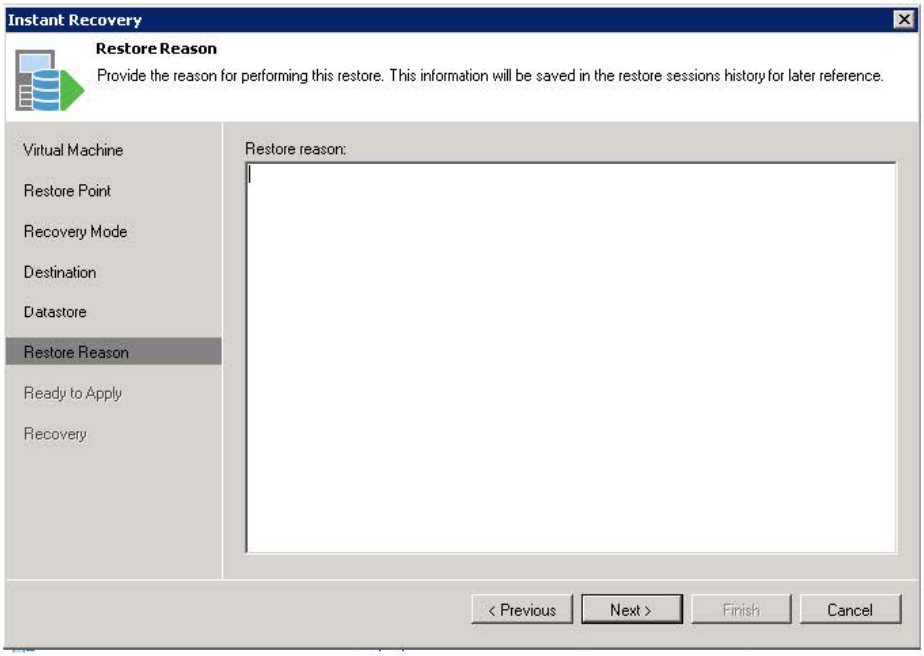
Click "Next," and select where in your virtual environment you wish to restore the server:



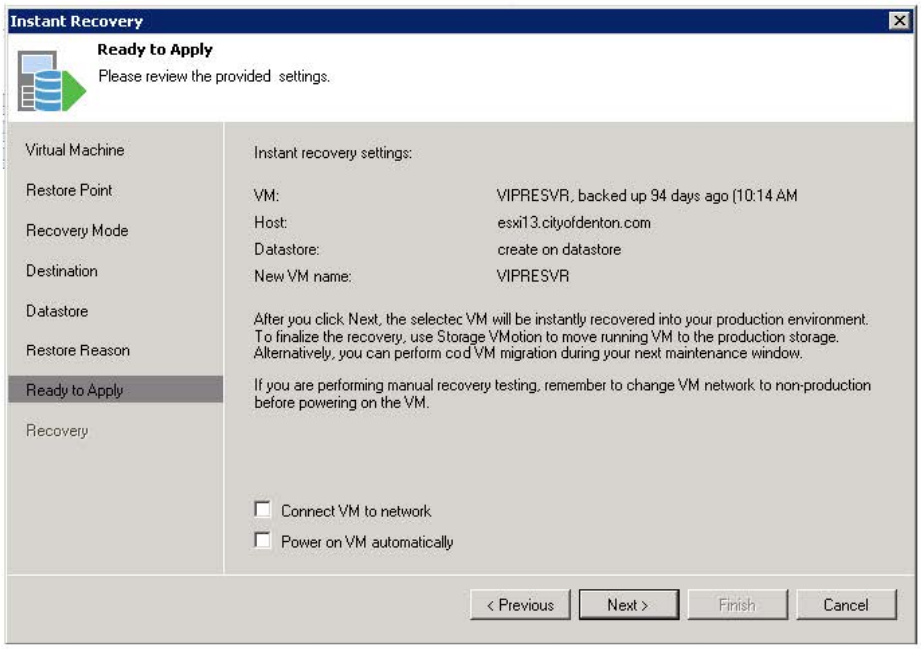
Click "Next." Pick a datastore.



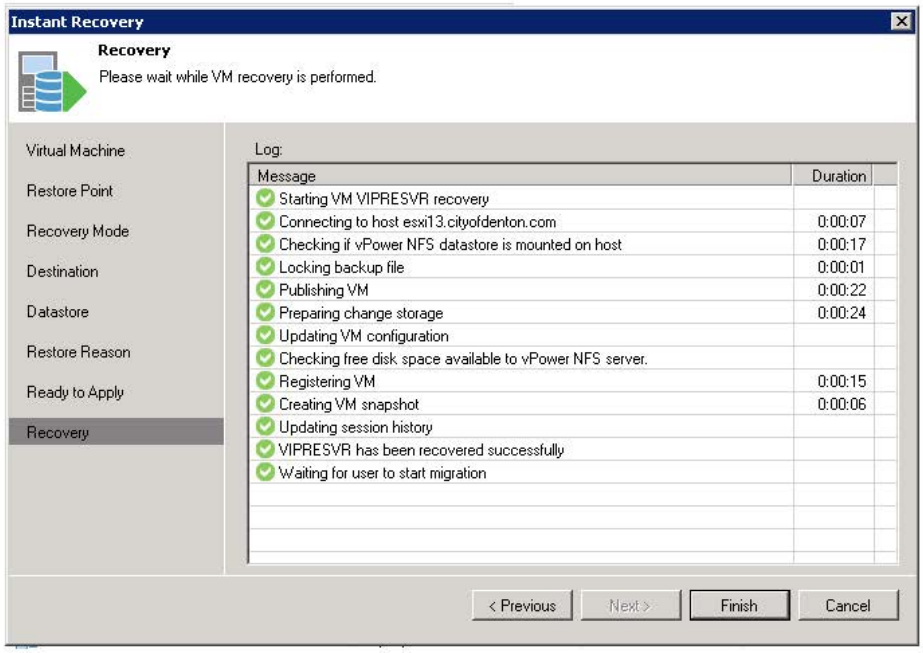
Click "Next," and provide a restore reason if you wish.



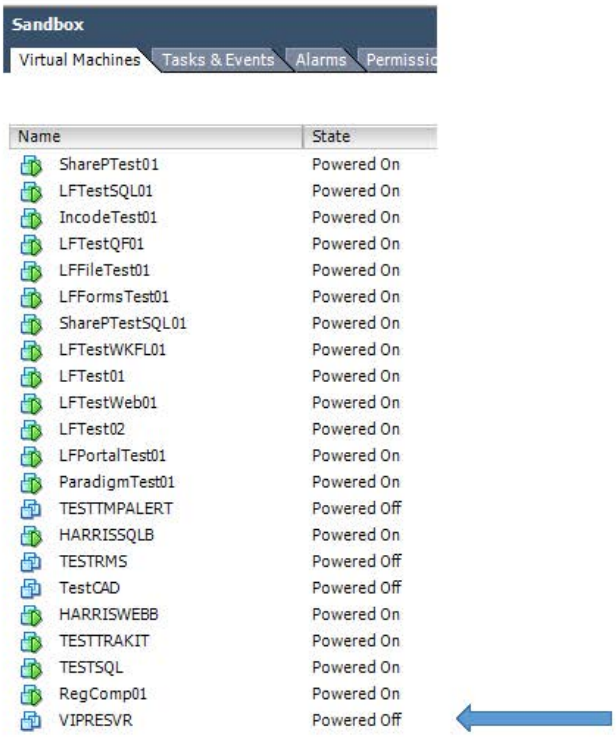
Click "Next," Choose whether or not to connect the restored server to the network and/or to power it on automatically. Be advised, however that there may be an IP conflict if the original server is still up and running.



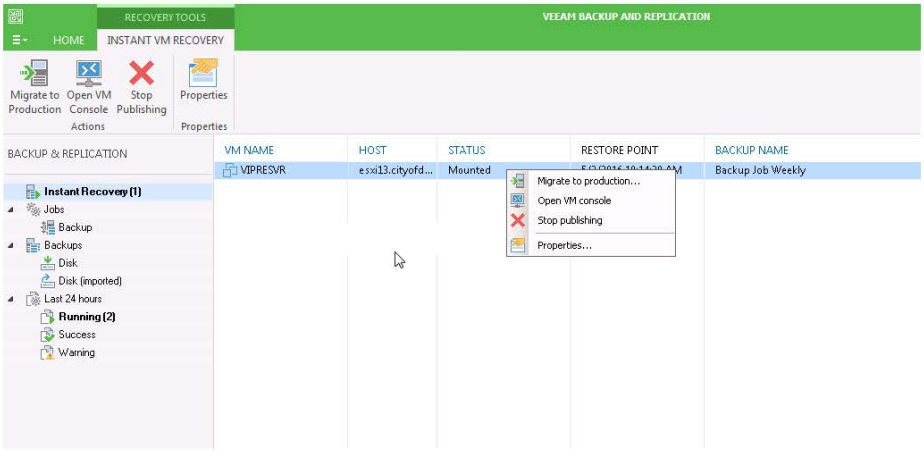
Click "Next," to begin the recovery.



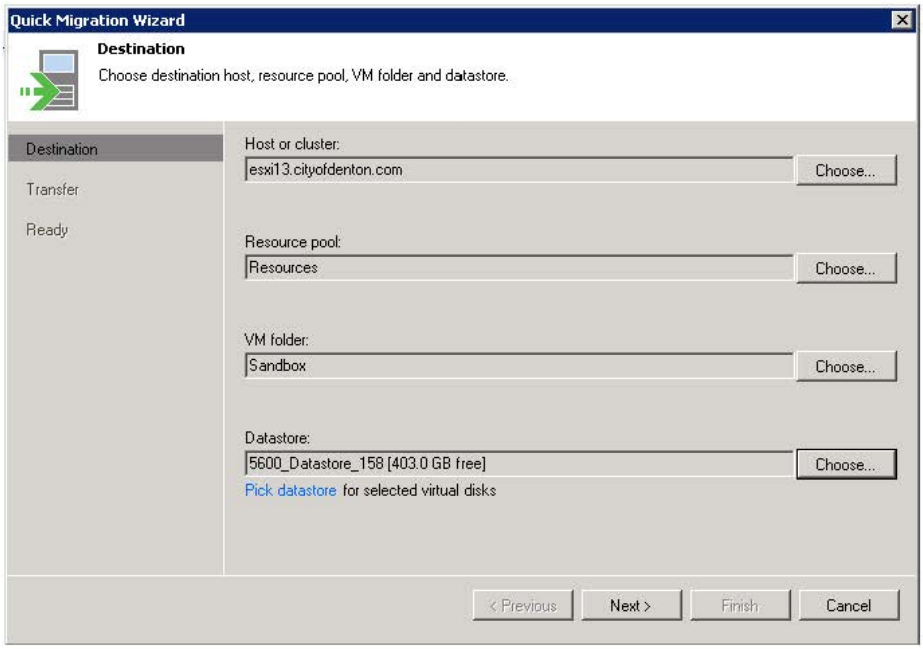
Aaannnnd, here's your server:



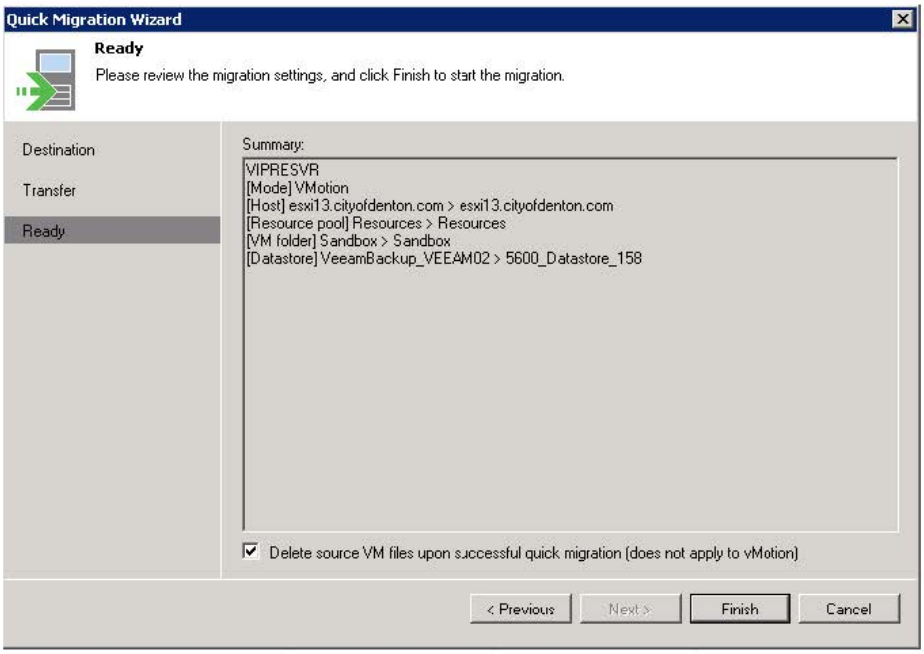
Once that's done, you still have to migrate the server into production:



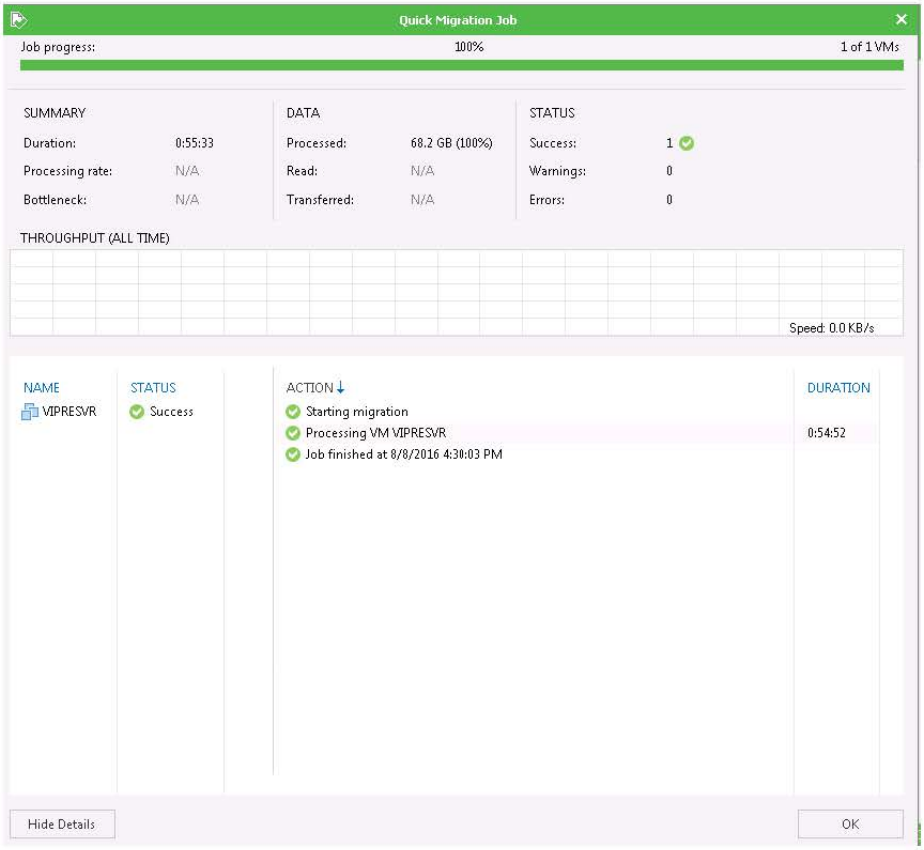
Make any changes that you wish in the Quick Migration Wizard:



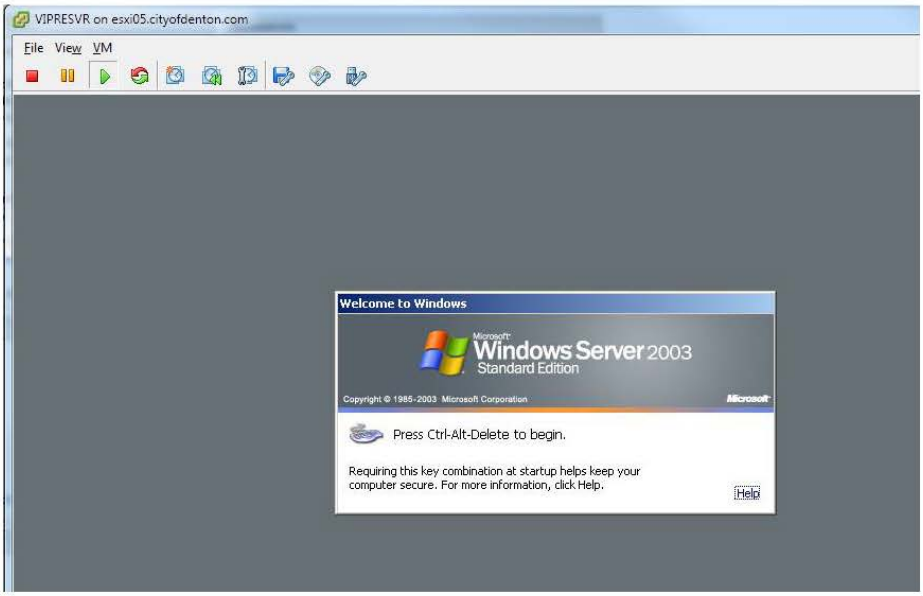
Click "Next" and complete migration selections, and then "Finish



Monitor progress:



Power on server:

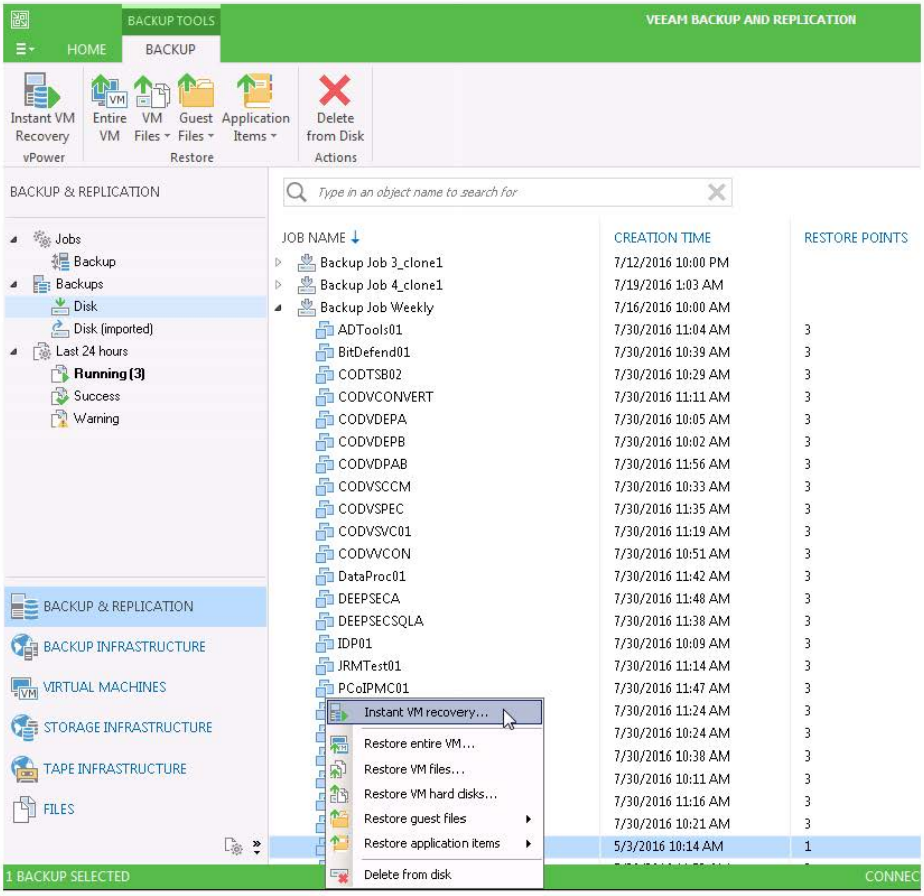


BCP Exercise August 5, 2016

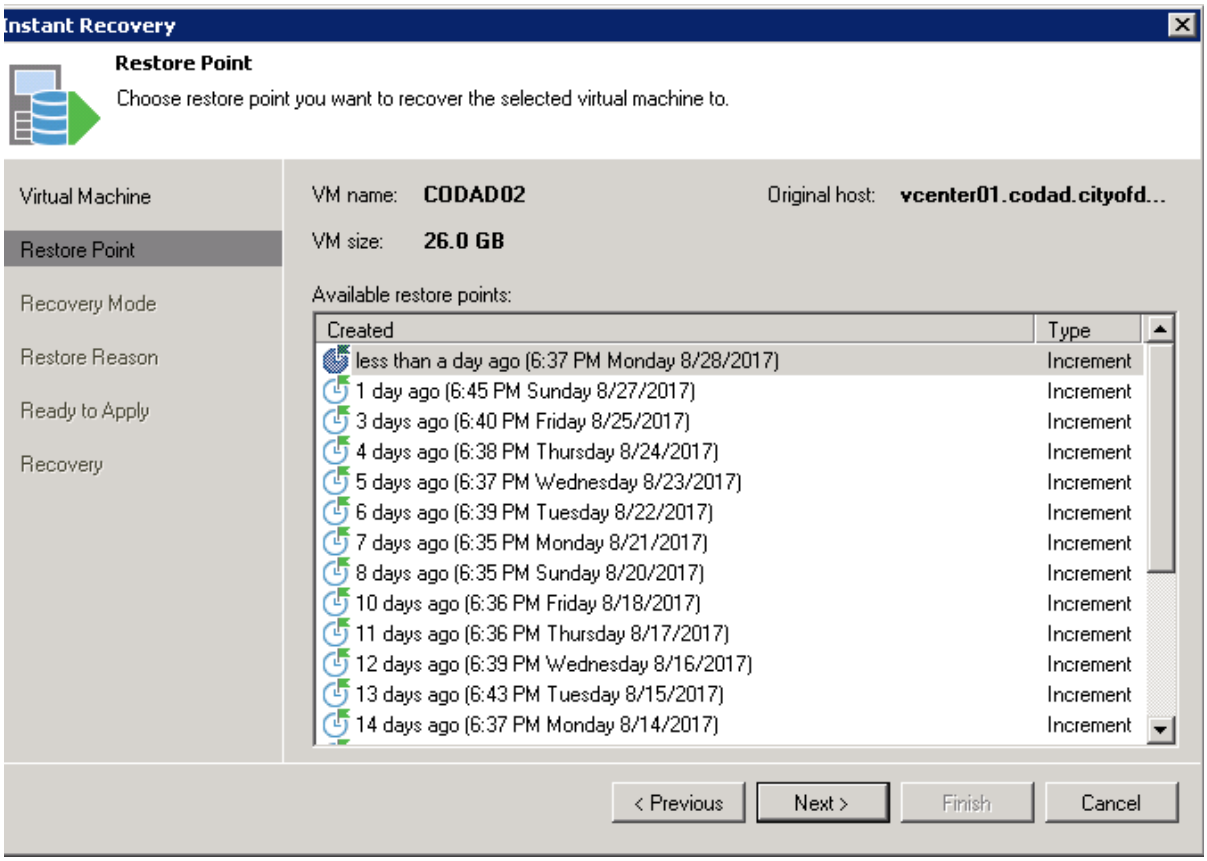
For purposes of this exercise – the restore of a complete virtual server, I have selected a server that has been decommissioned and removed from production, supposing that there may have been critical information that needed to be recovered.

SO:

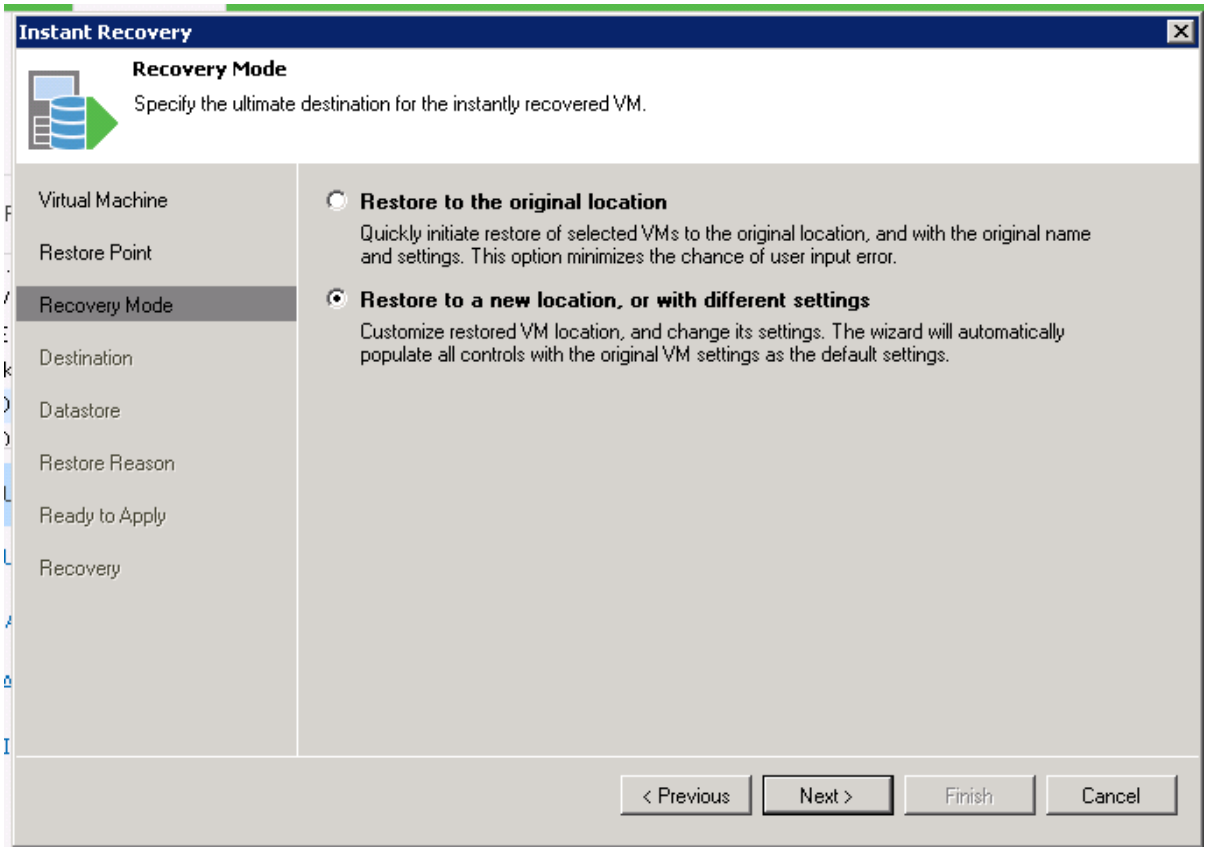
First, login to the Veeam console, select the server to be recovered from the backups on disk:



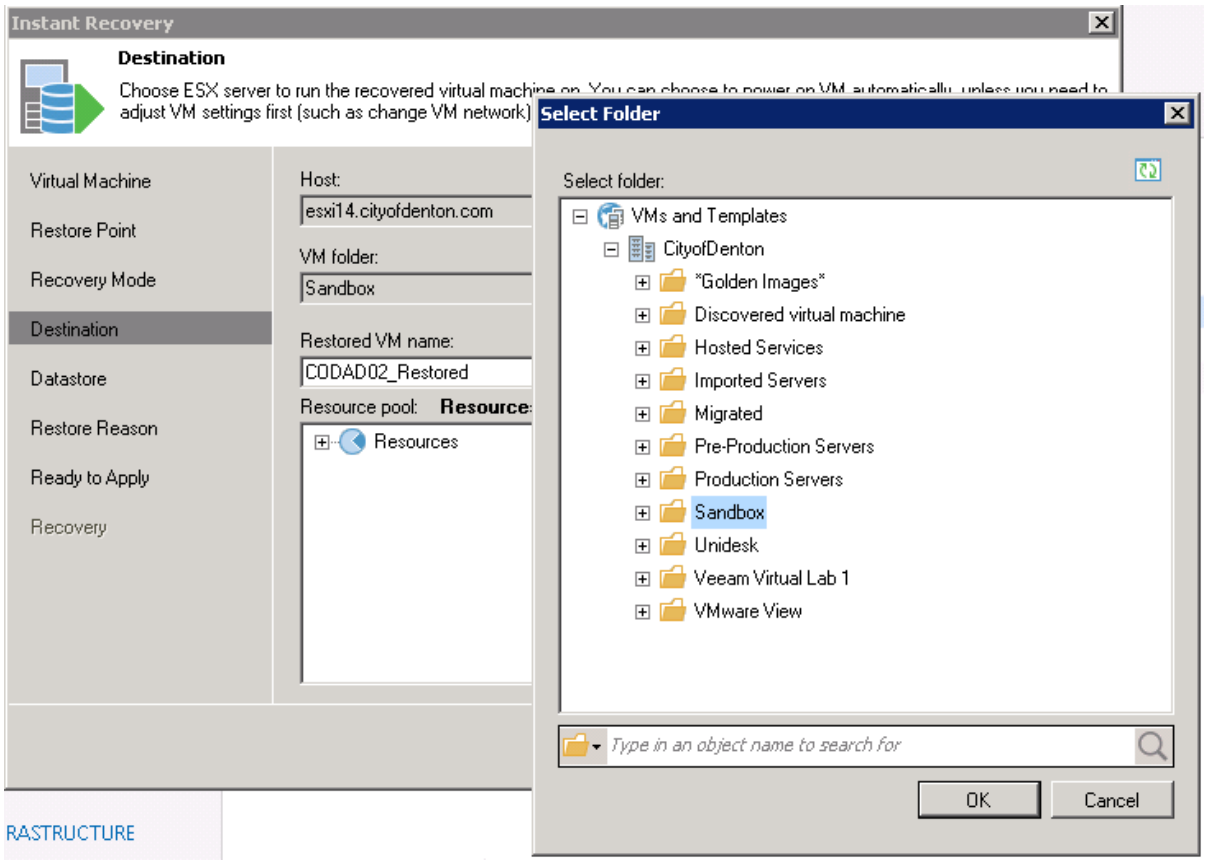
The most recent restore point is selected.



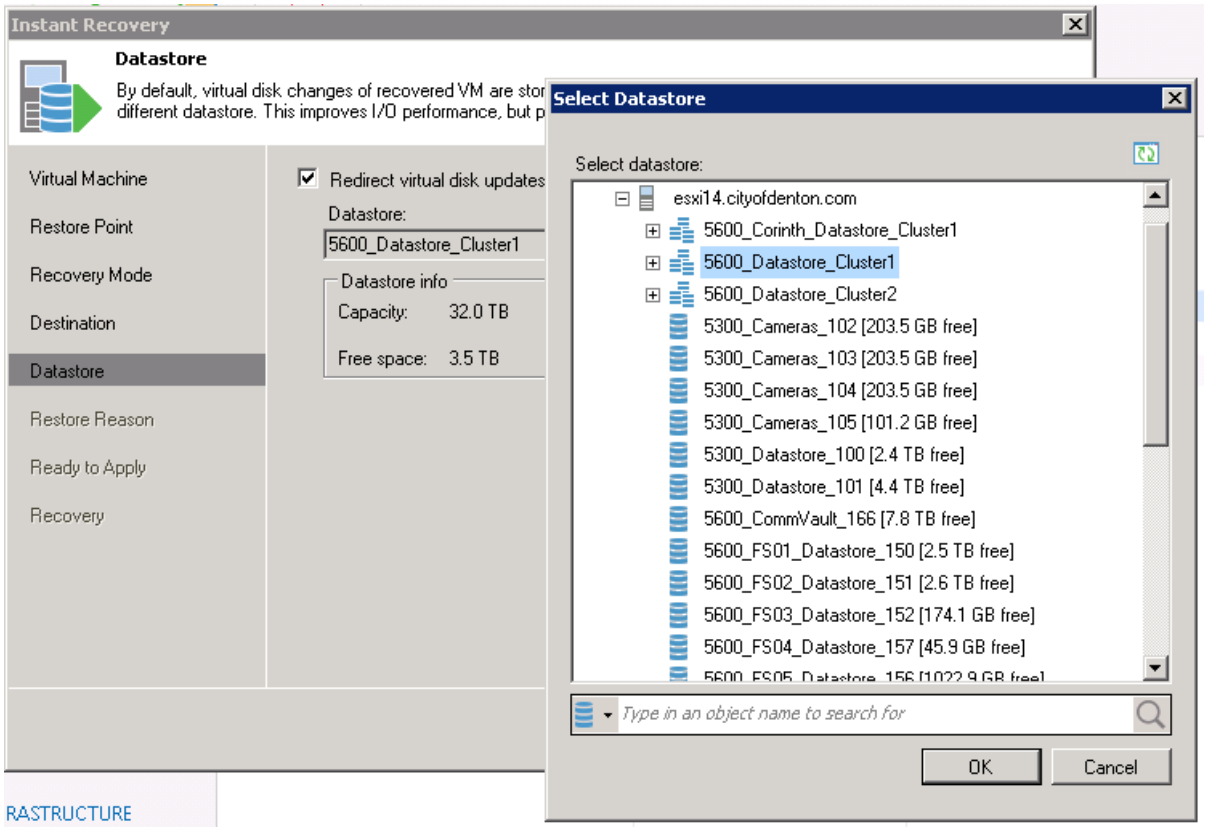
If VM to be recovered has been removed, original location can be selected. For this restore exercise, new location is selected.



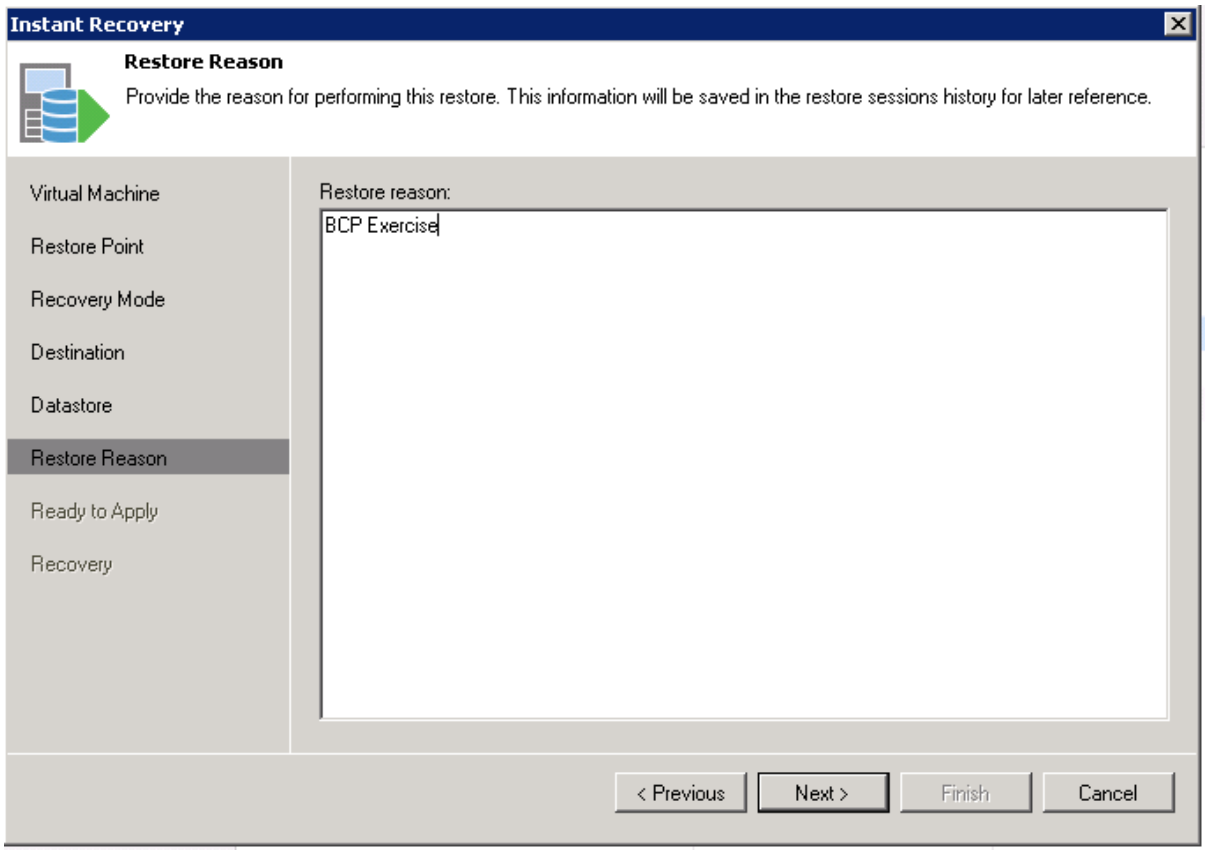
For this exercise, we'll restore the VM to the sandbox location.



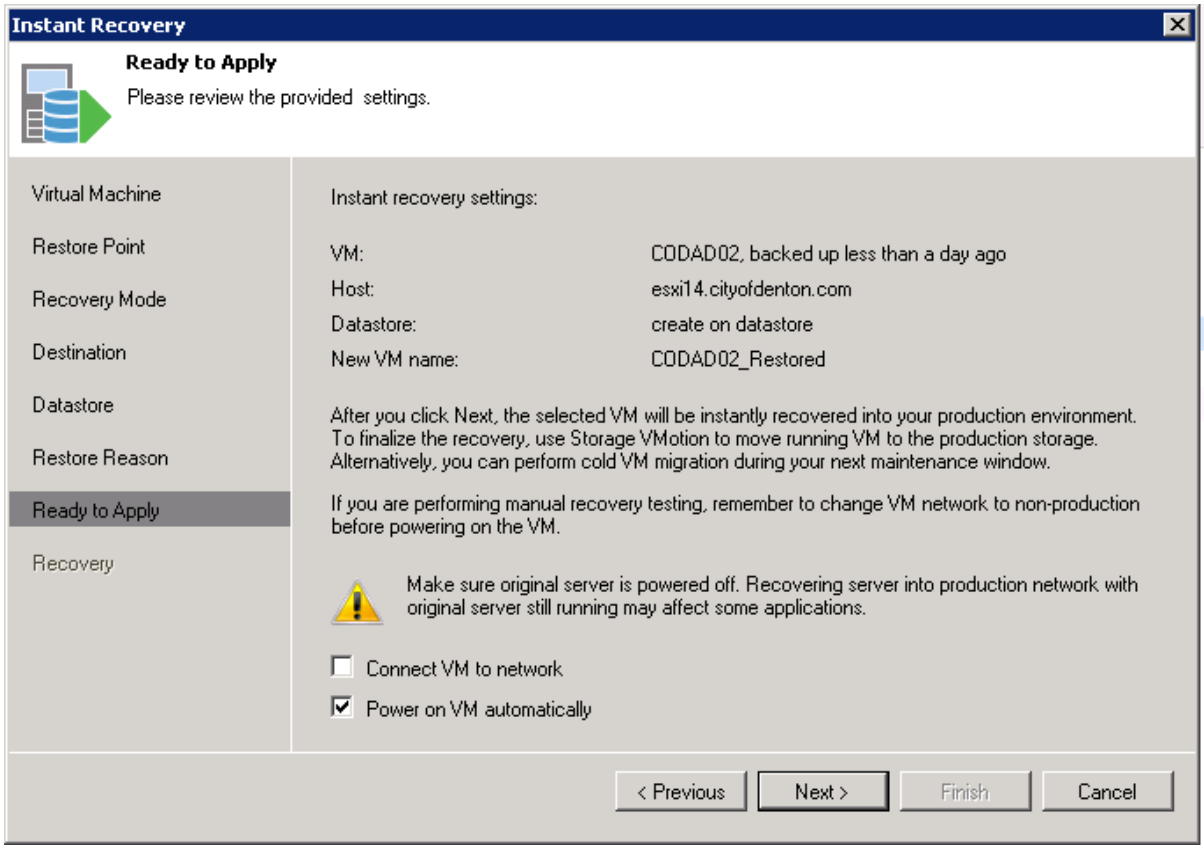
Redirected to a SAN datastore for quicker performance on the current restore, but not required.



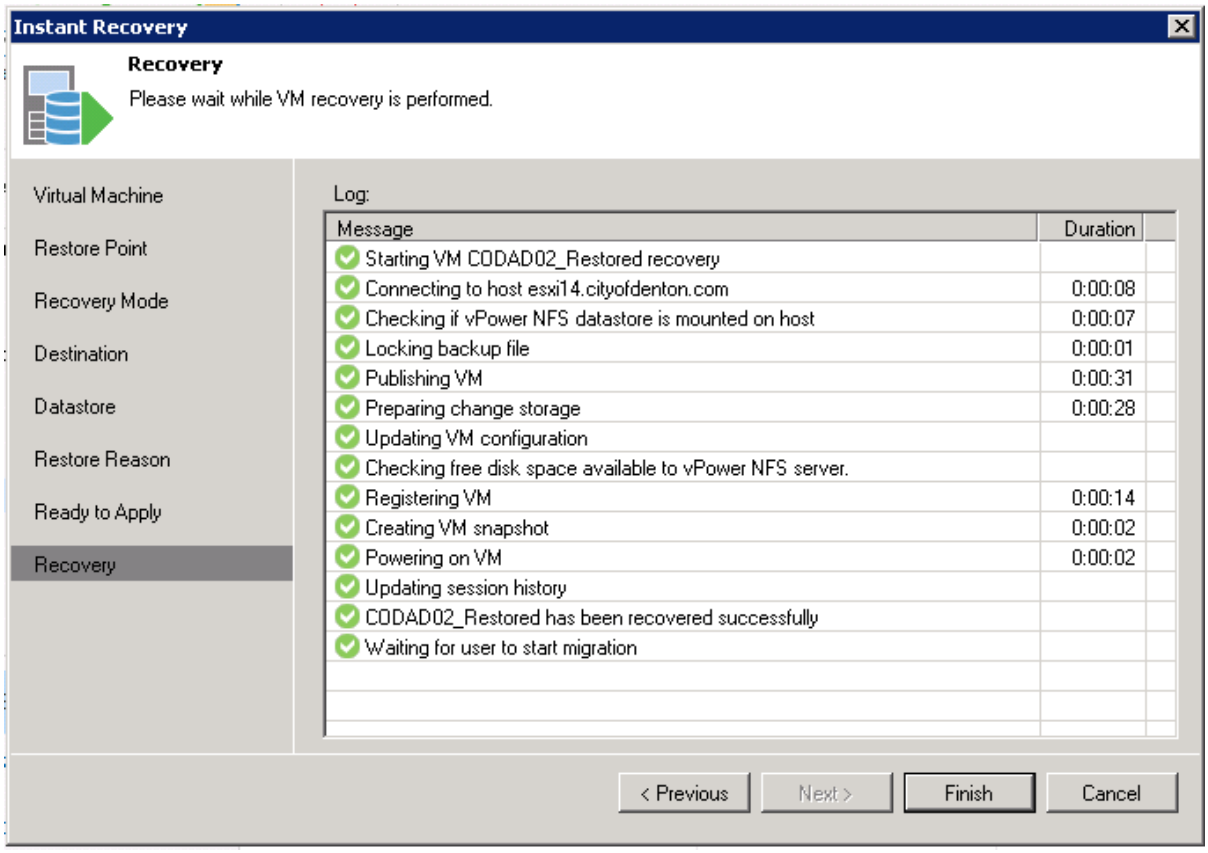
Provide reason as needed, in this exercise for BCP.



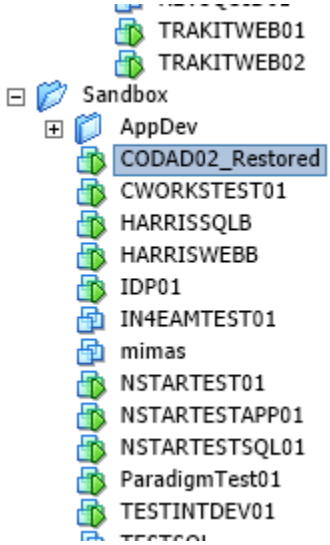
For this exercise, VM is powered on but not connected to network so it does not interfere with Production VM.



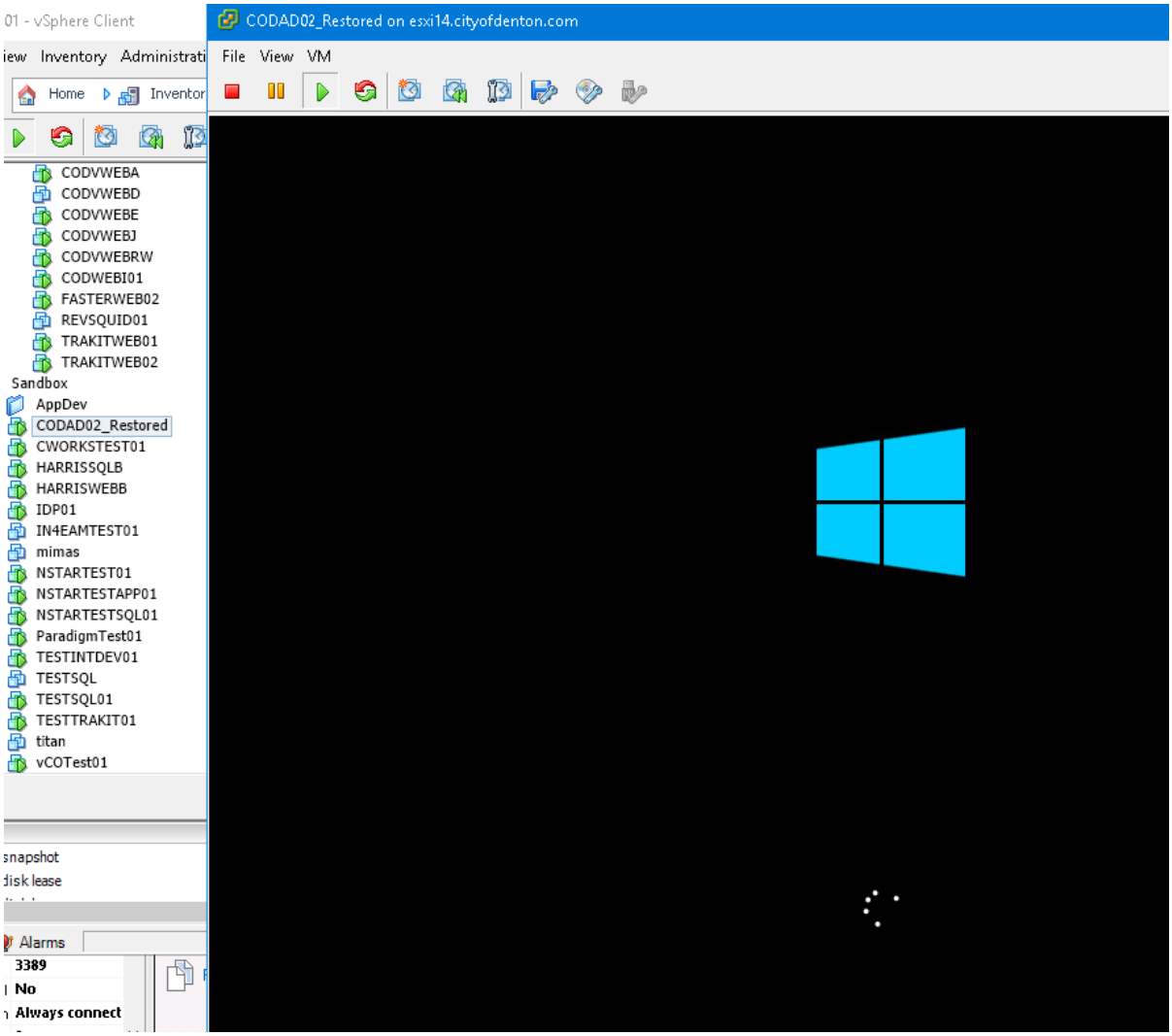
VM is recovered and waiting for migration to Production in a real recovery.



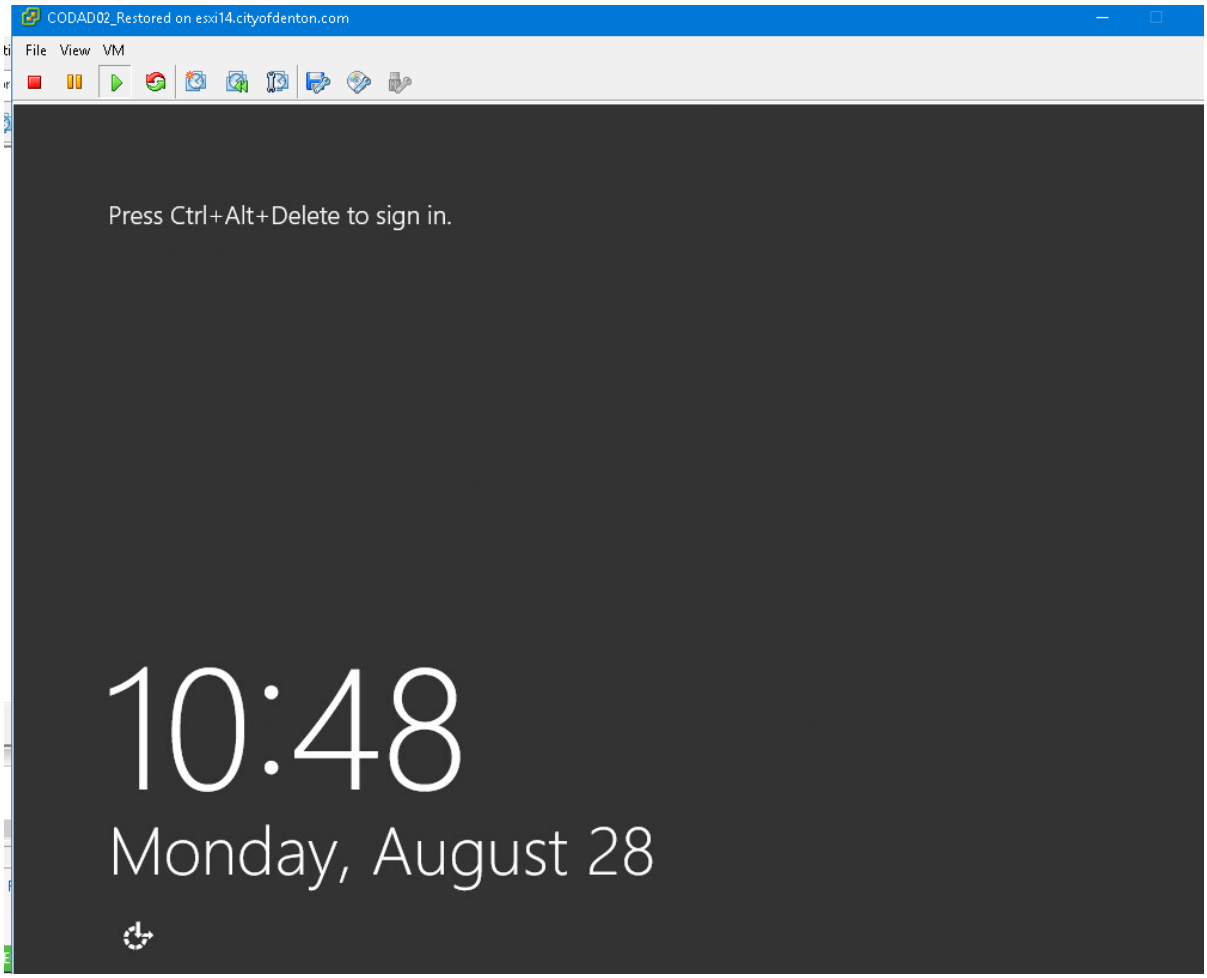
VM is recovered and showing in Vcenter as expected.



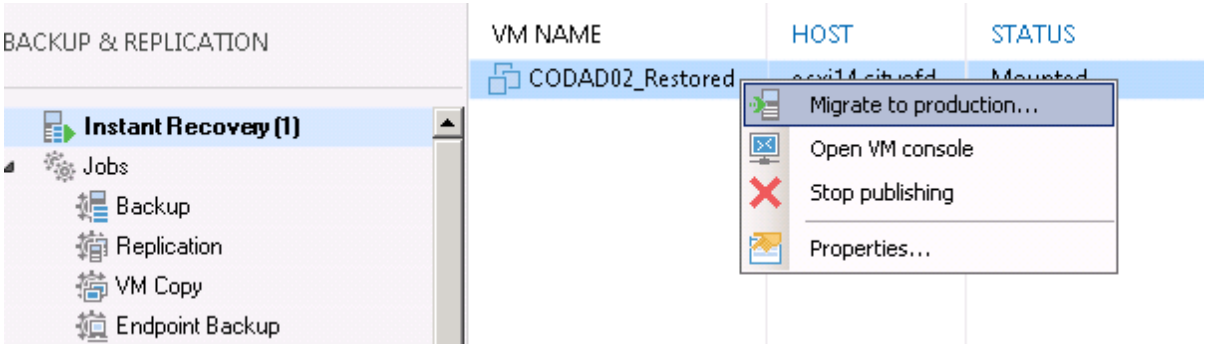
VM is booting from Instant Recovery restore, rebooting directly from backup data for quickest recovery.



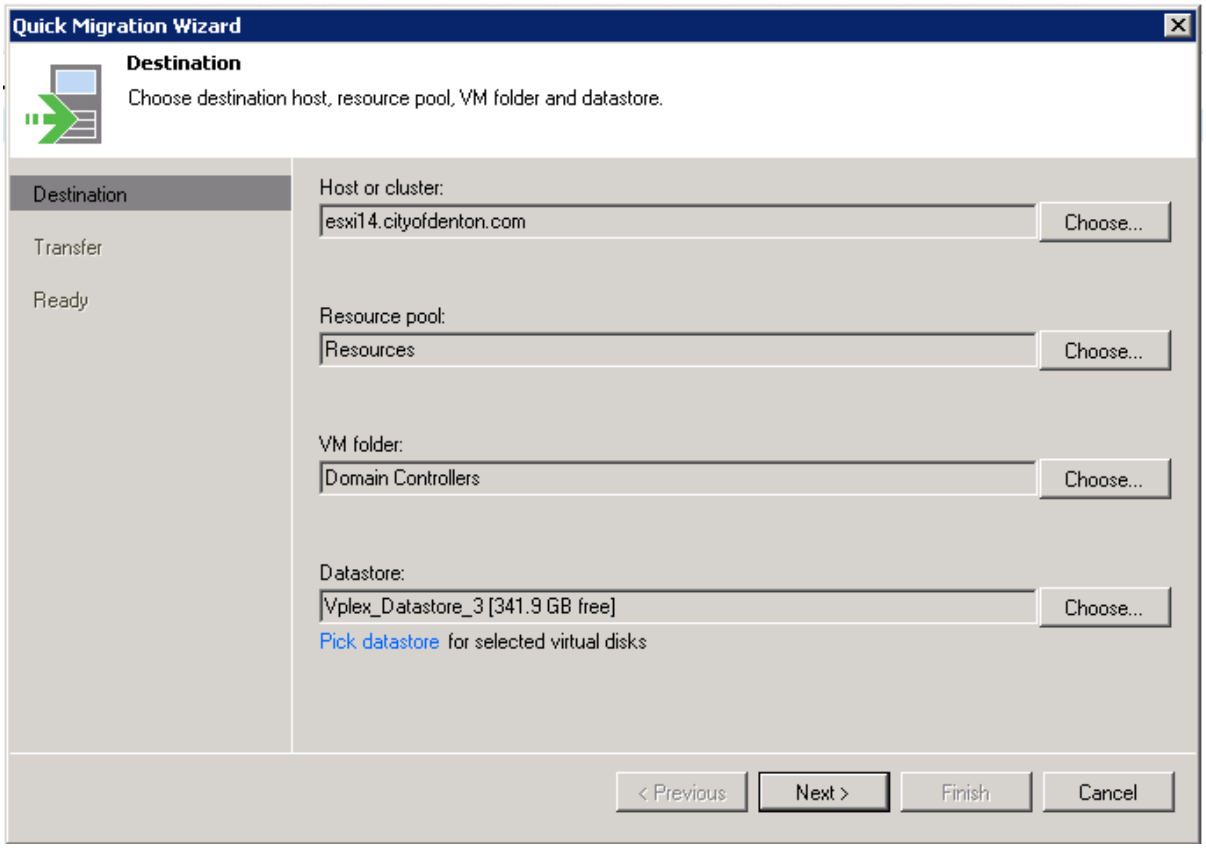
Login to VM and verify recovered OS and data.



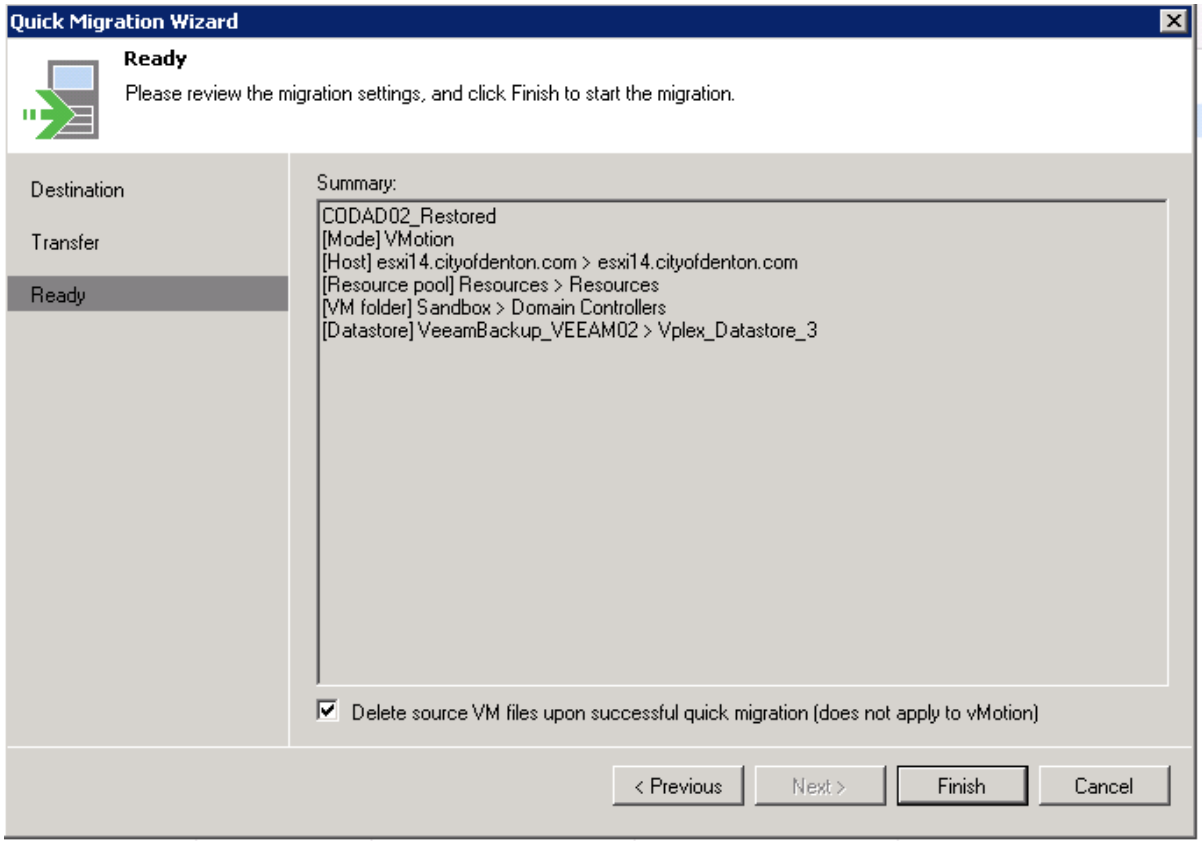
For a real restore, perform a migration to complete the recovery process.



Migrate to default location as needed, or adjust settings to new locations.

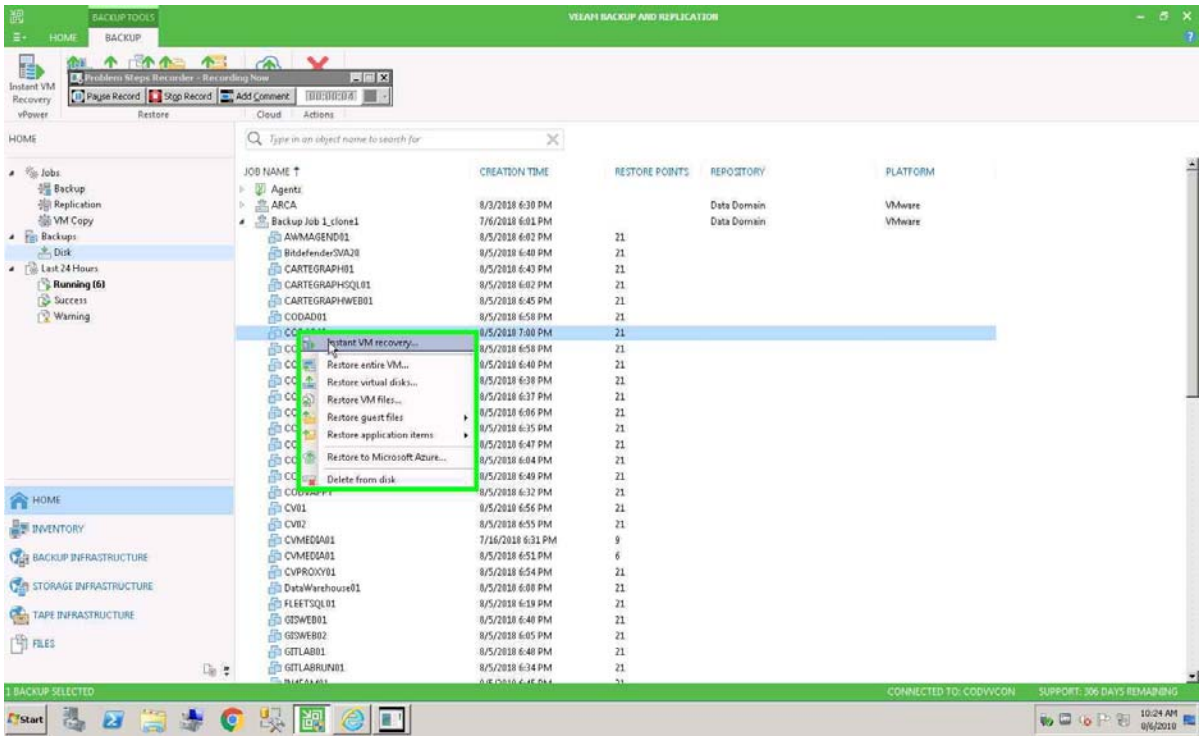


Defaults are recommended. Allow migration wizard to analyze success of migration, and complete migration. VM will then be in production environment as recovered VM.

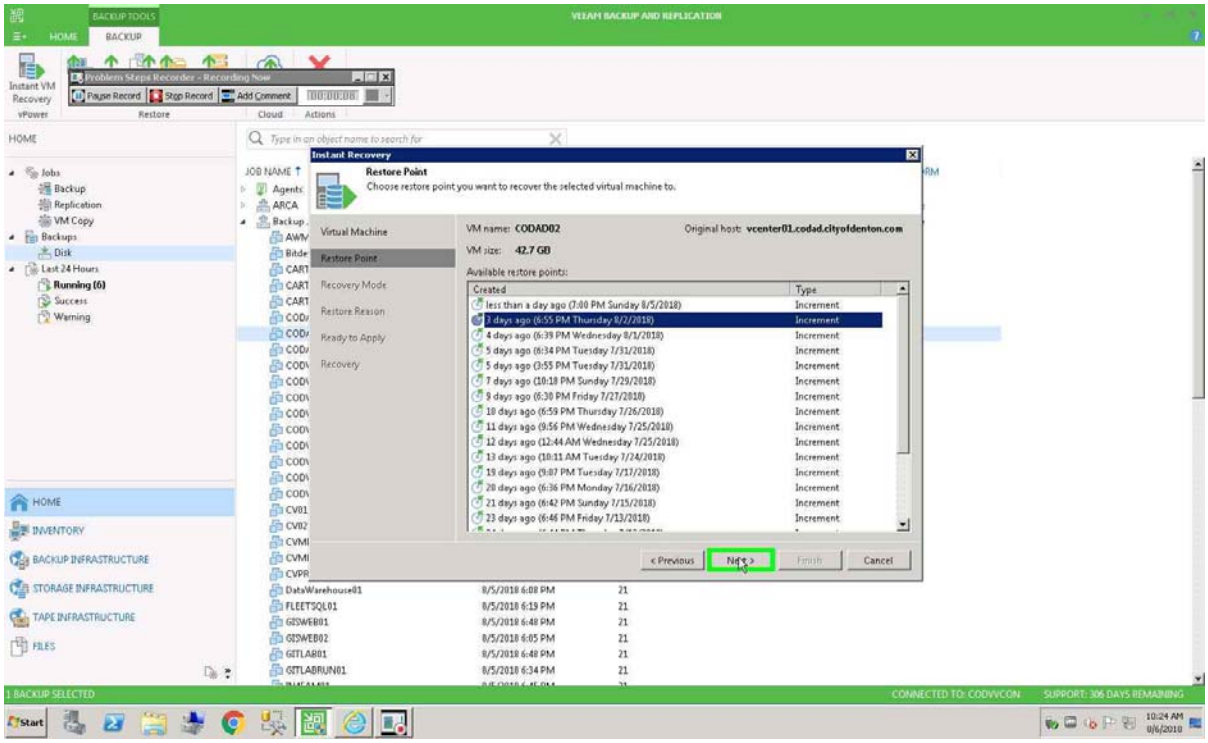


BCP Exercise August 2, 2018

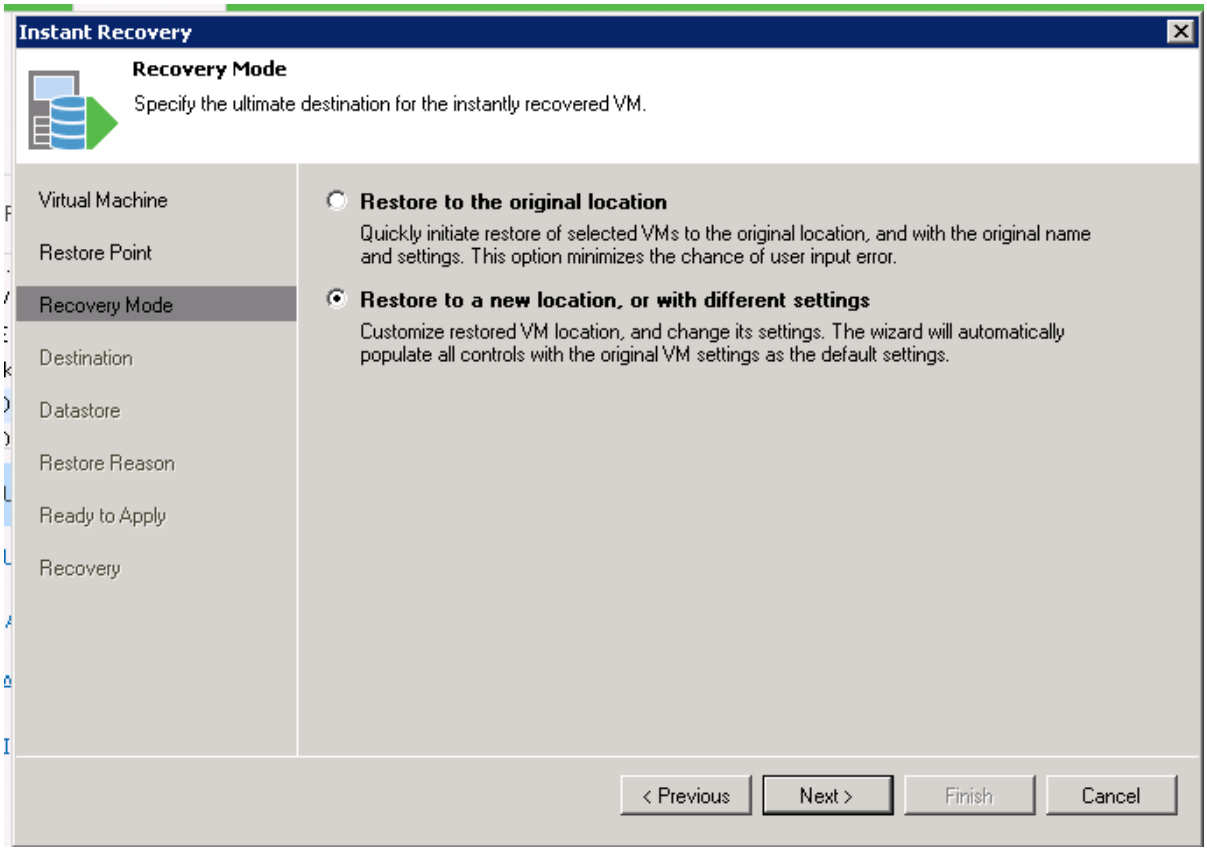
For the purpose of this exercise I will restore CODAD02 to the Sandbox and rename the VM. To start, login to the VEEAM console on CODVVCON. Right-click on the VM and choose Instant Recovery.



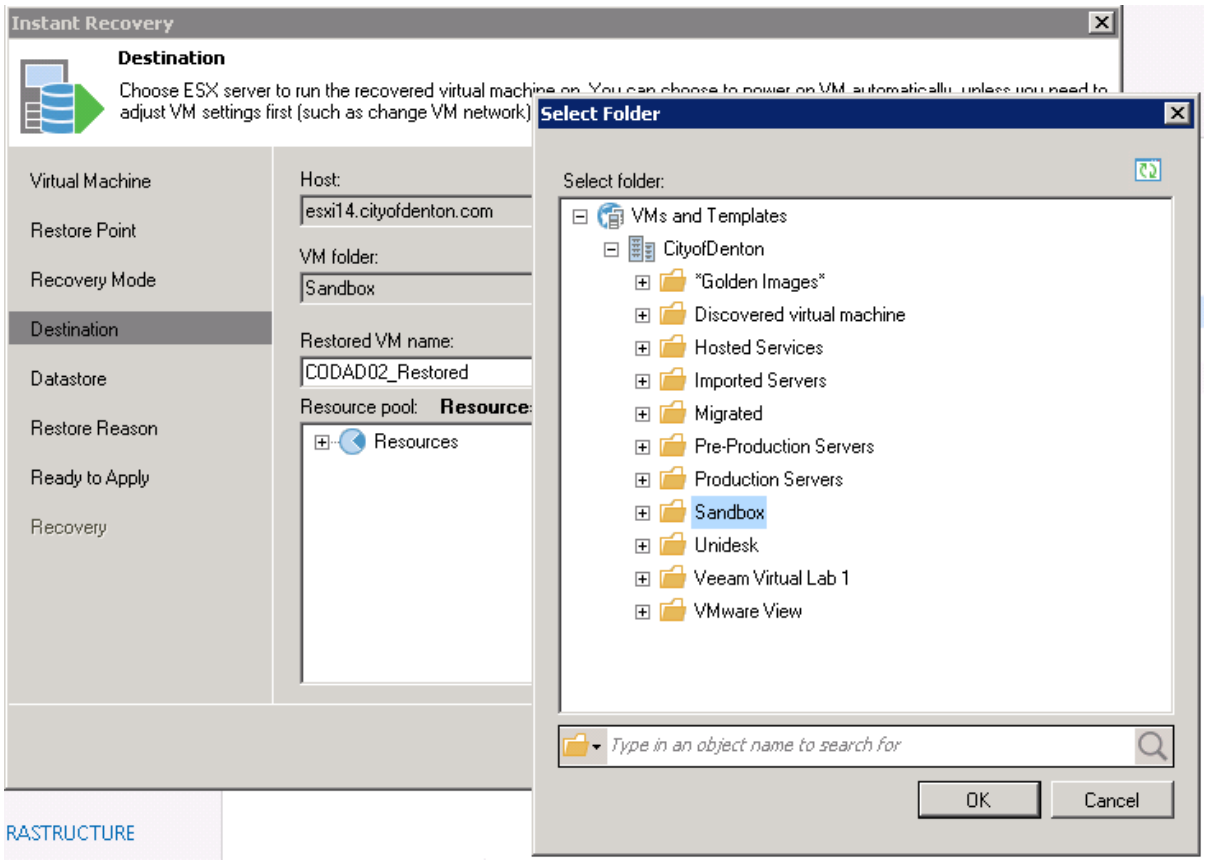
The most recent restore point is selected.



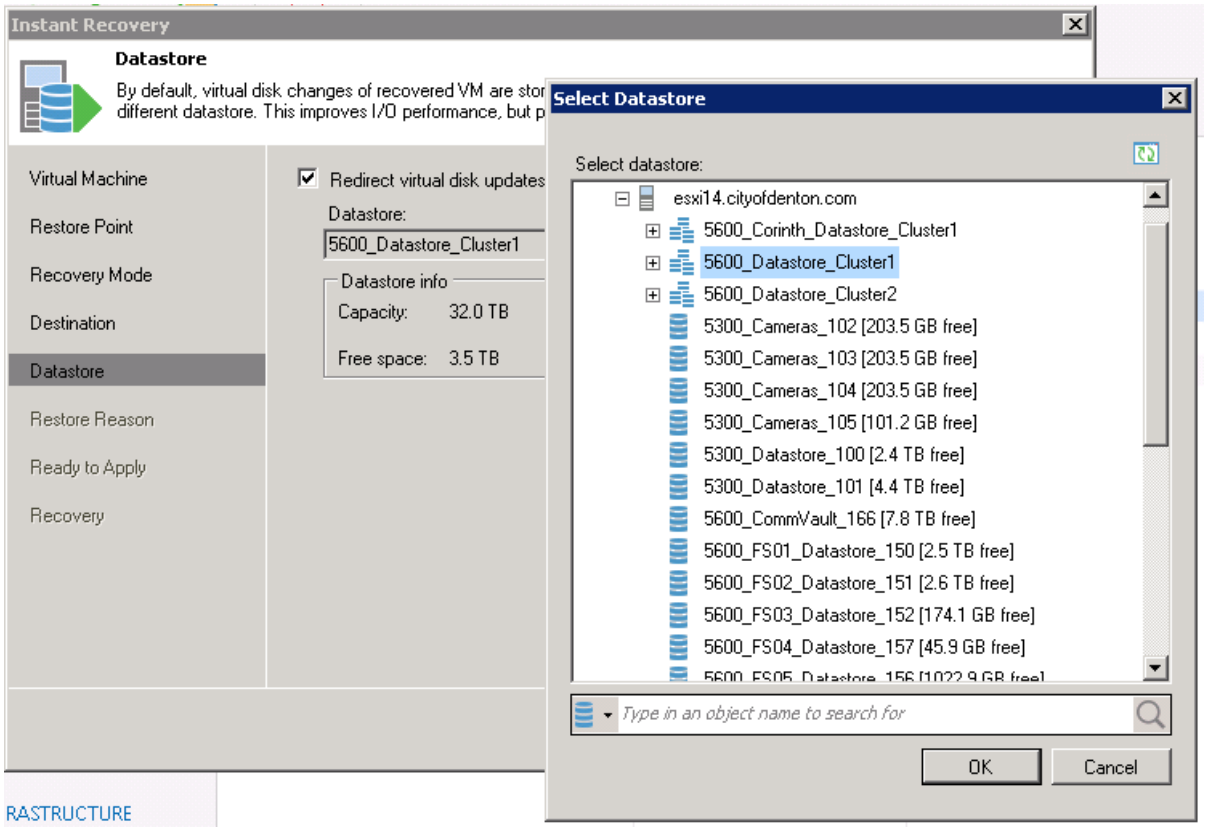
If VM to be recovered has been removed, original location can be selected. For this restore exercise, new location is selected.



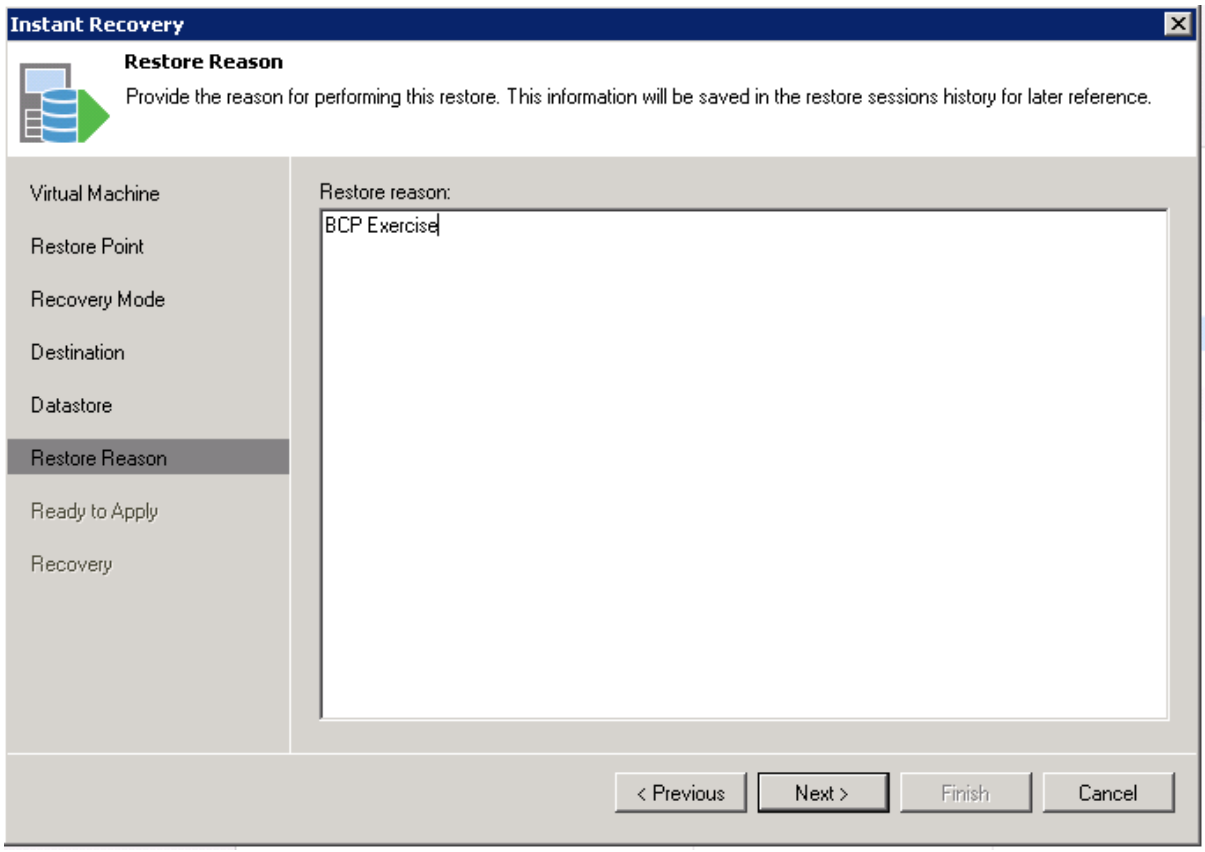
For this exercise, we'll restore the VM to the sandbox location.



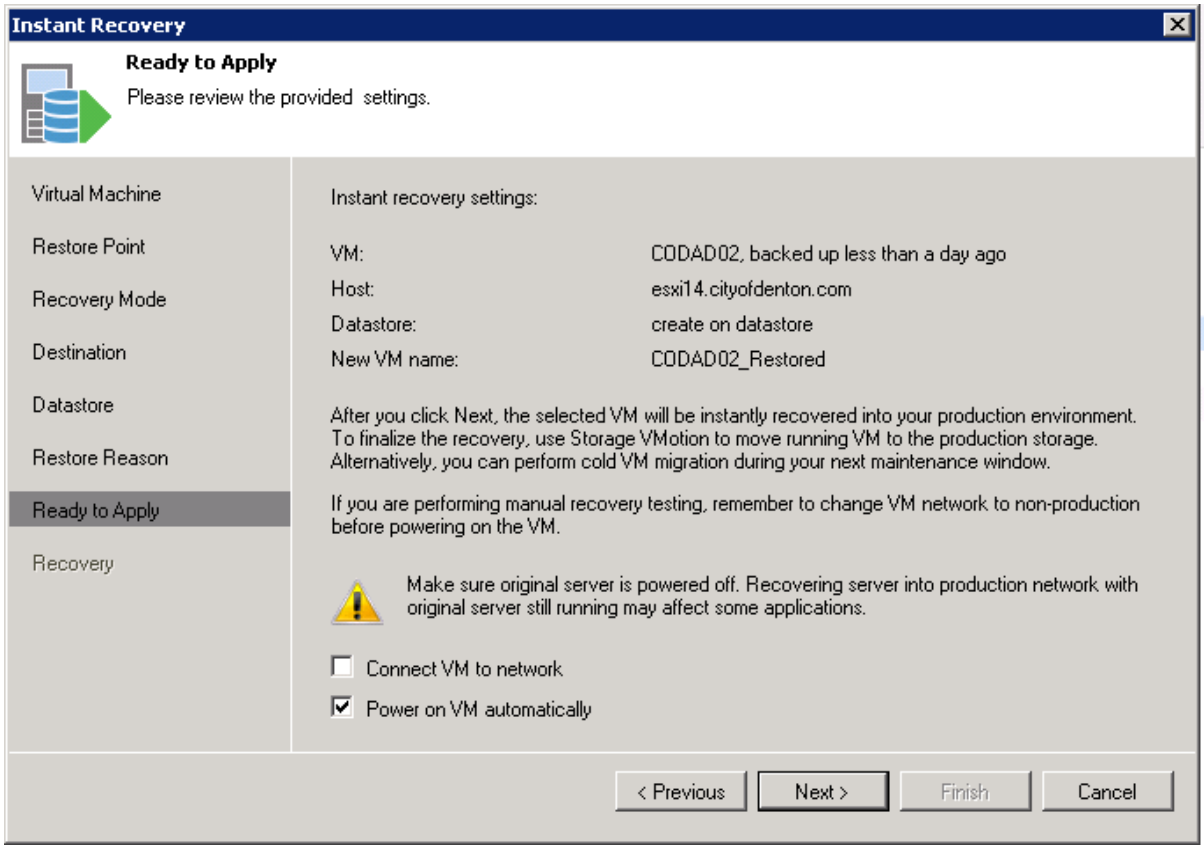
Redirected to a SAN datastore for quicker performance on the current restore, but not required.



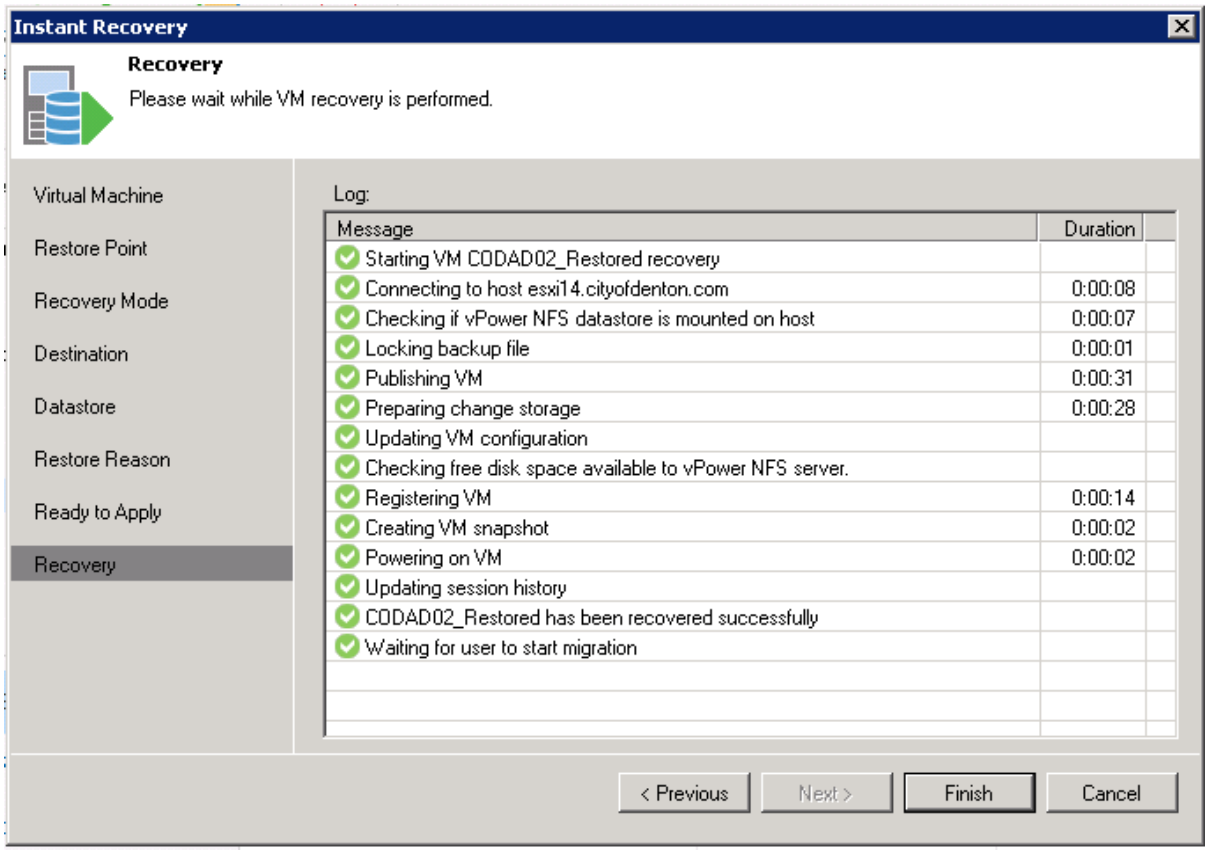
Provide reason as needed, in this exercise for BCP.



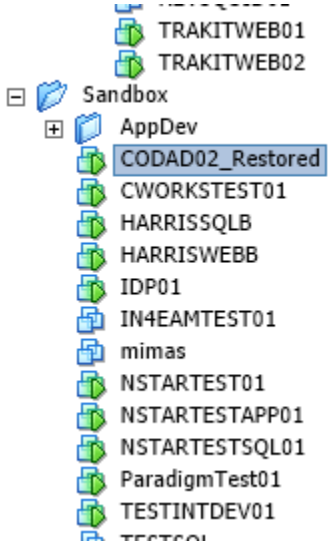
For this exercise, VM is powered on but not connected to network so it does not interfere with Production VM.



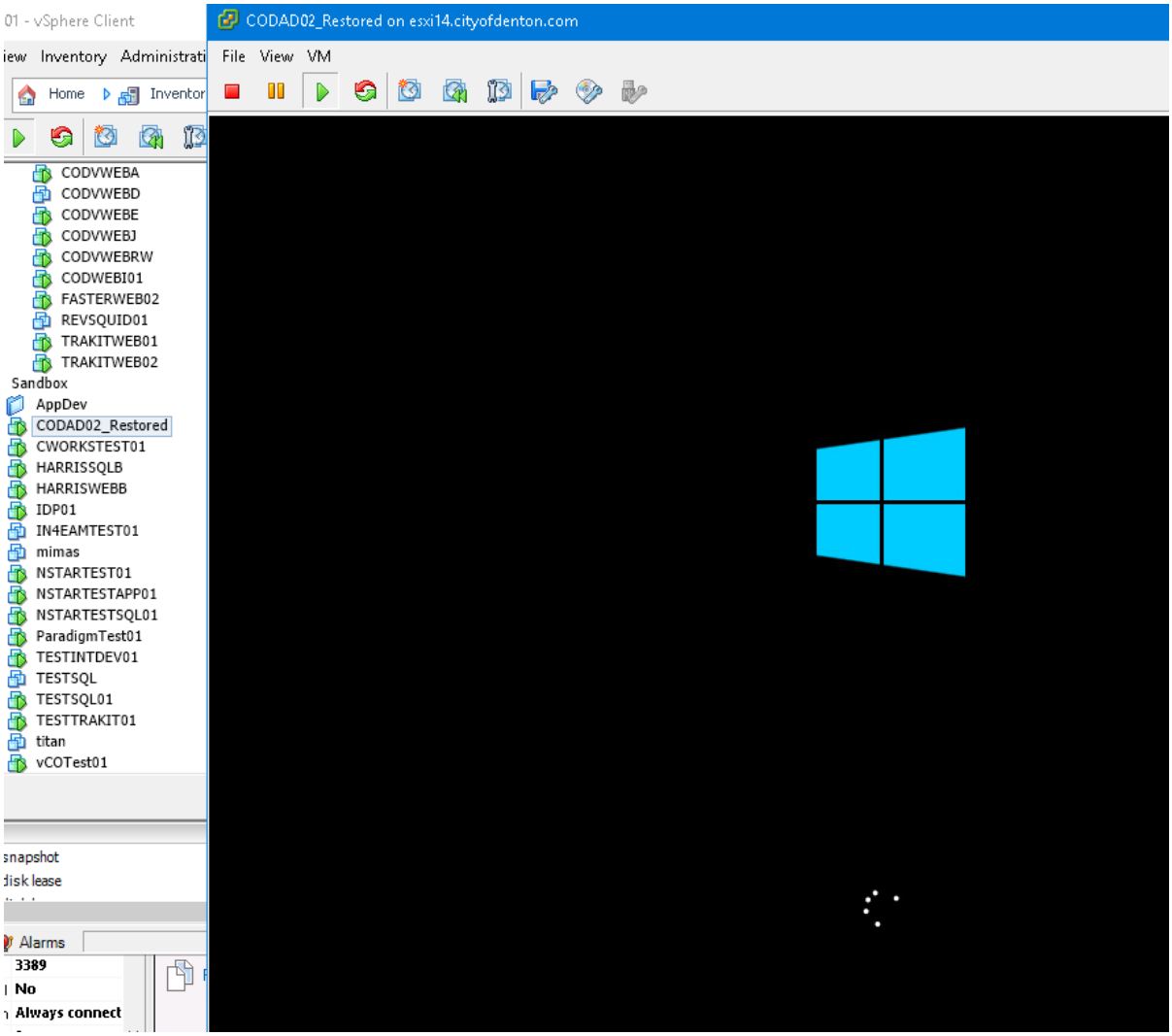
VM is recovered and waiting for migration to Production in a real recovery.



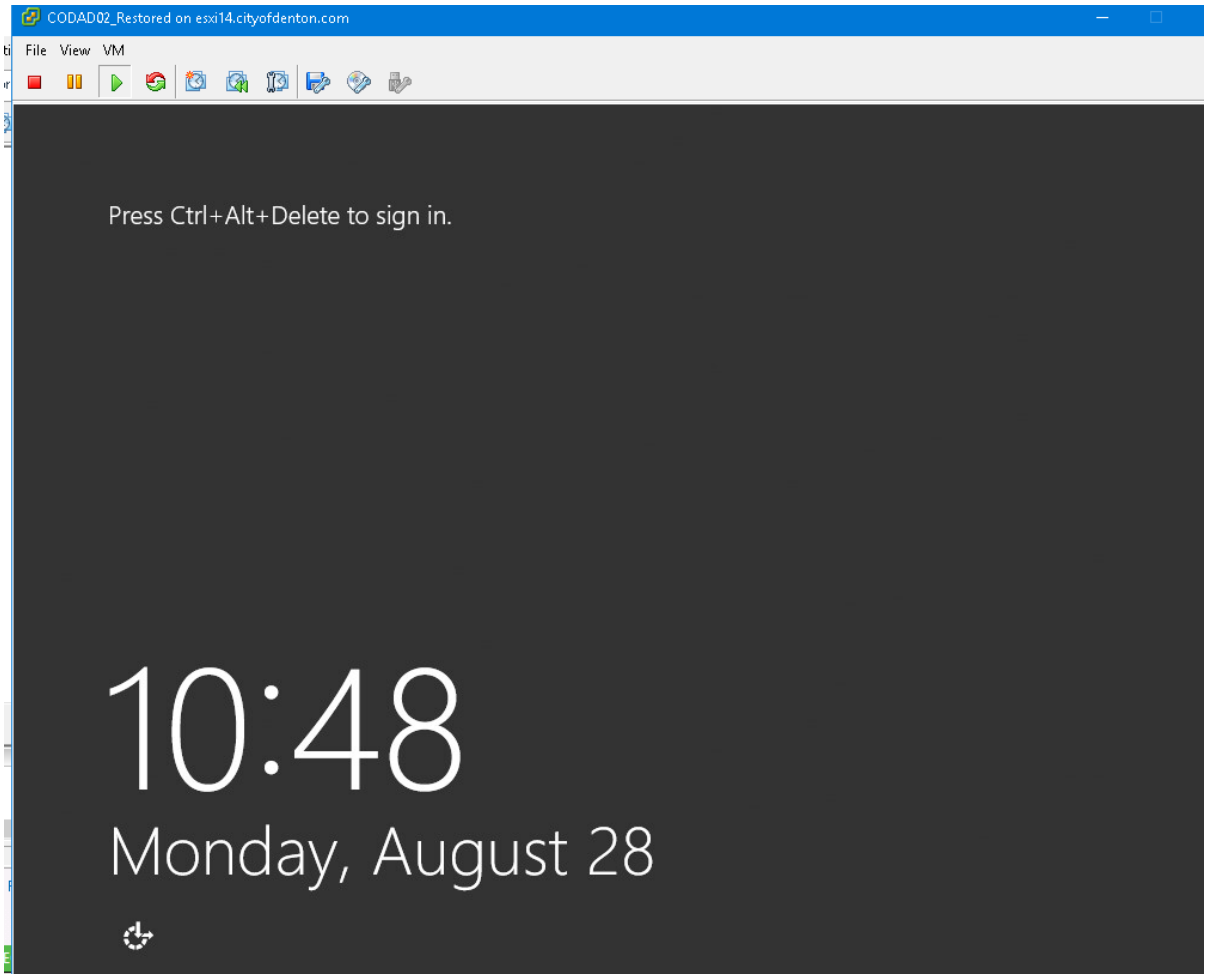
VM is recovered and showing in Vcenter as expected.



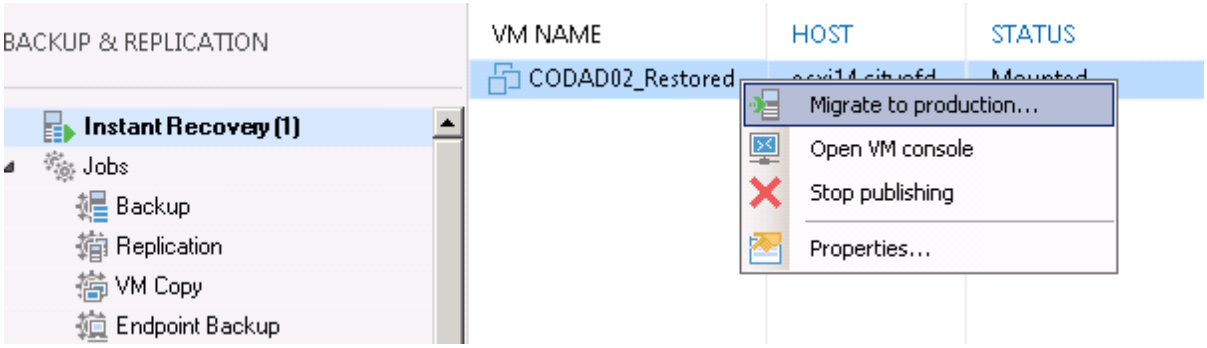
VM is booting from Instant Recovery restore, rebooting directly from backup data for quickest recovery.



Login to VM and verify recovered OS and data.



For a real restore, perform a migration to complete the recovery process.



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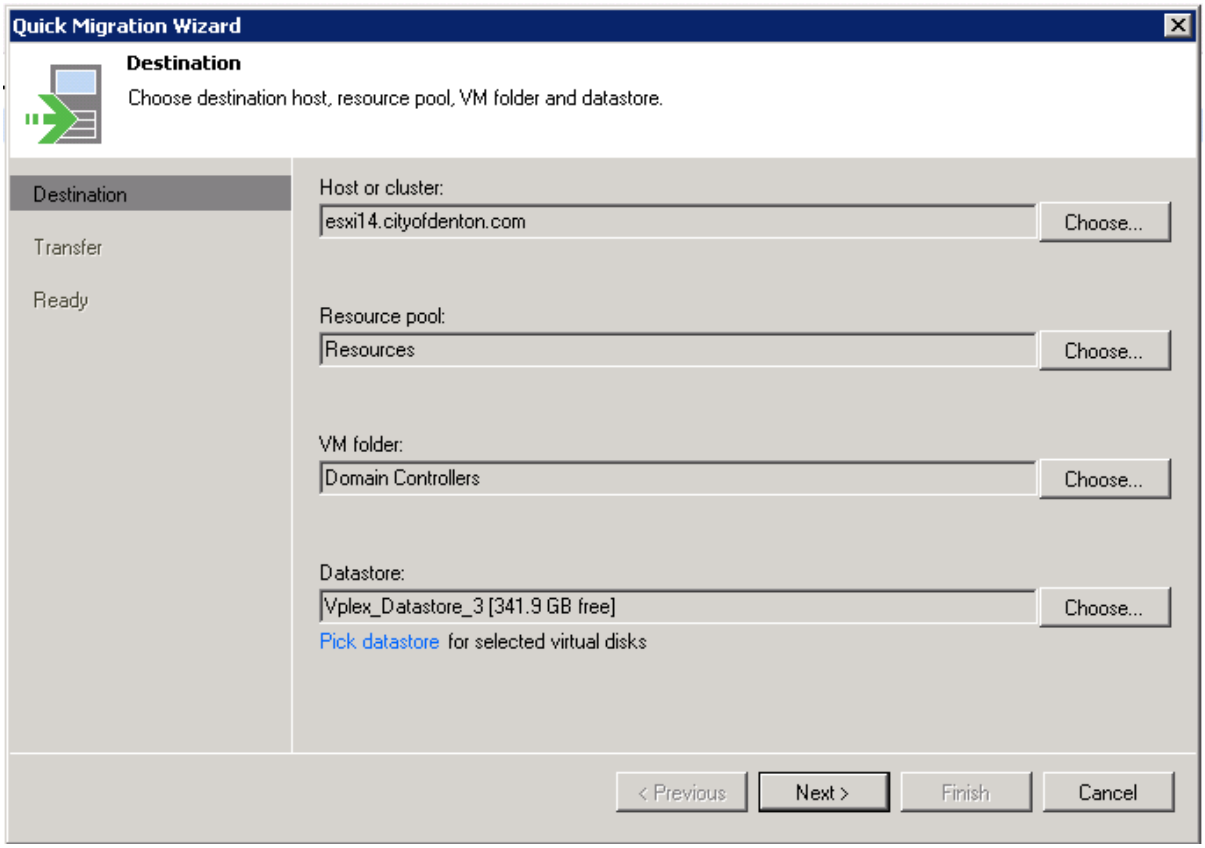
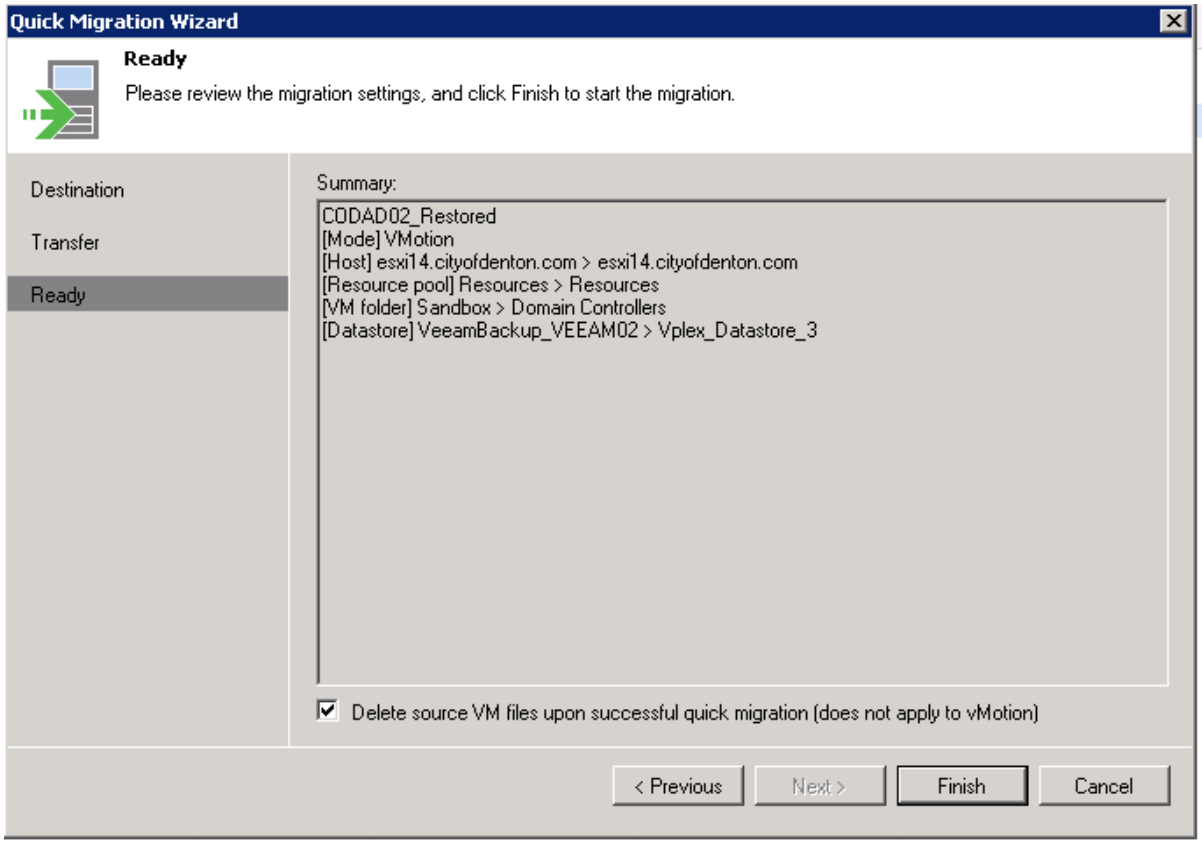


Defaults are recommended. Allow migration wizard to analyze success of migration, and complete migration. VM will then be in production environment as recovered VM.



BCP Exercise August 2, 2019

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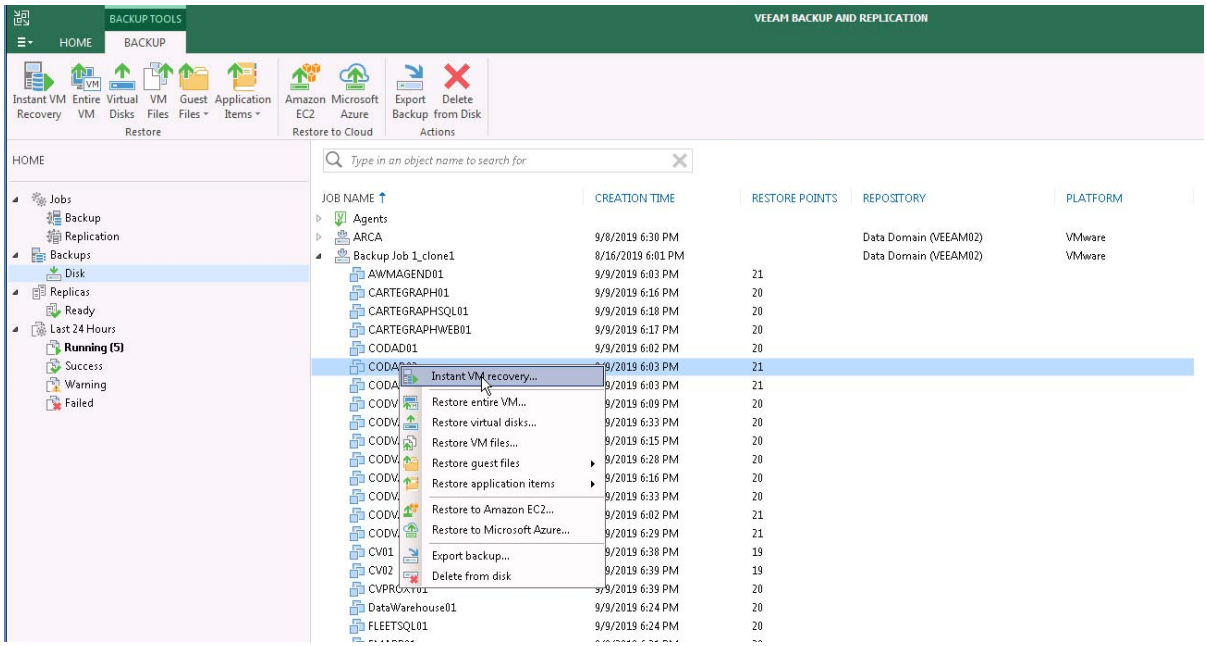
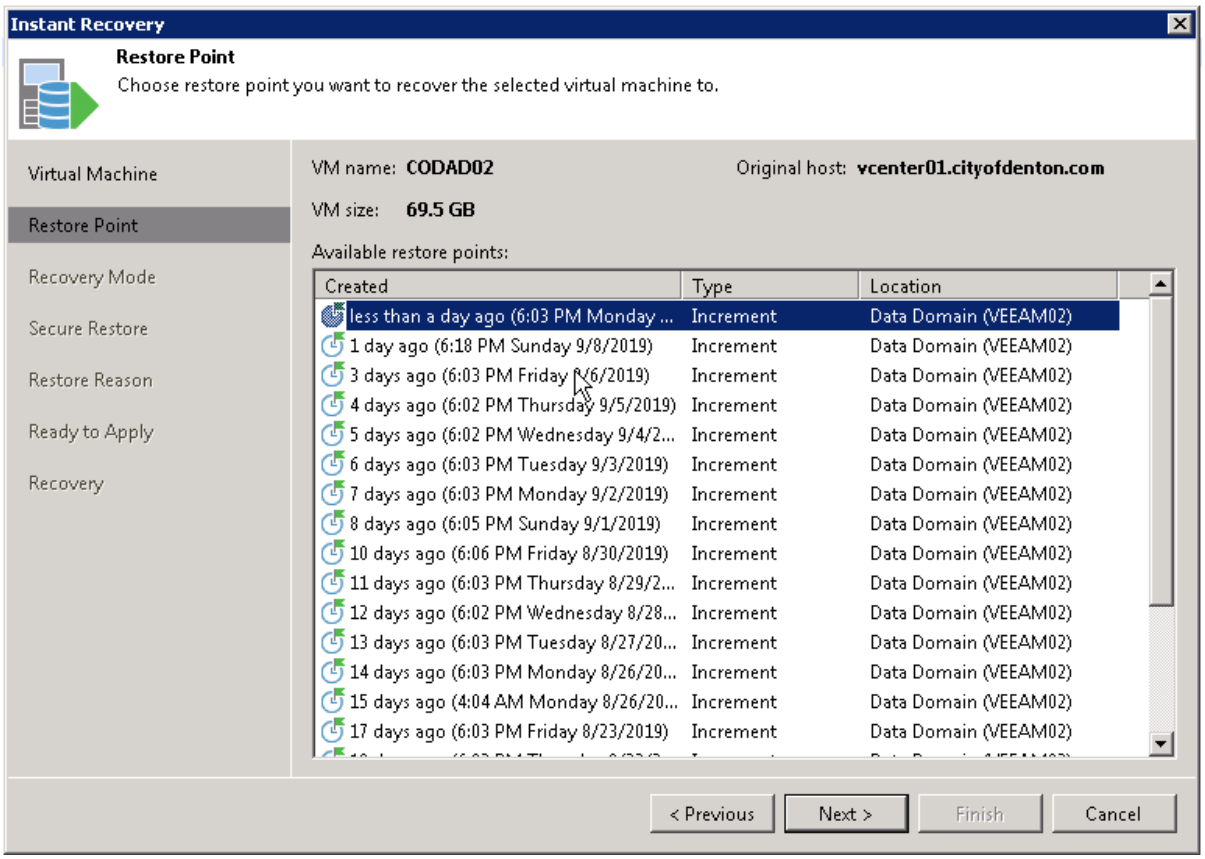
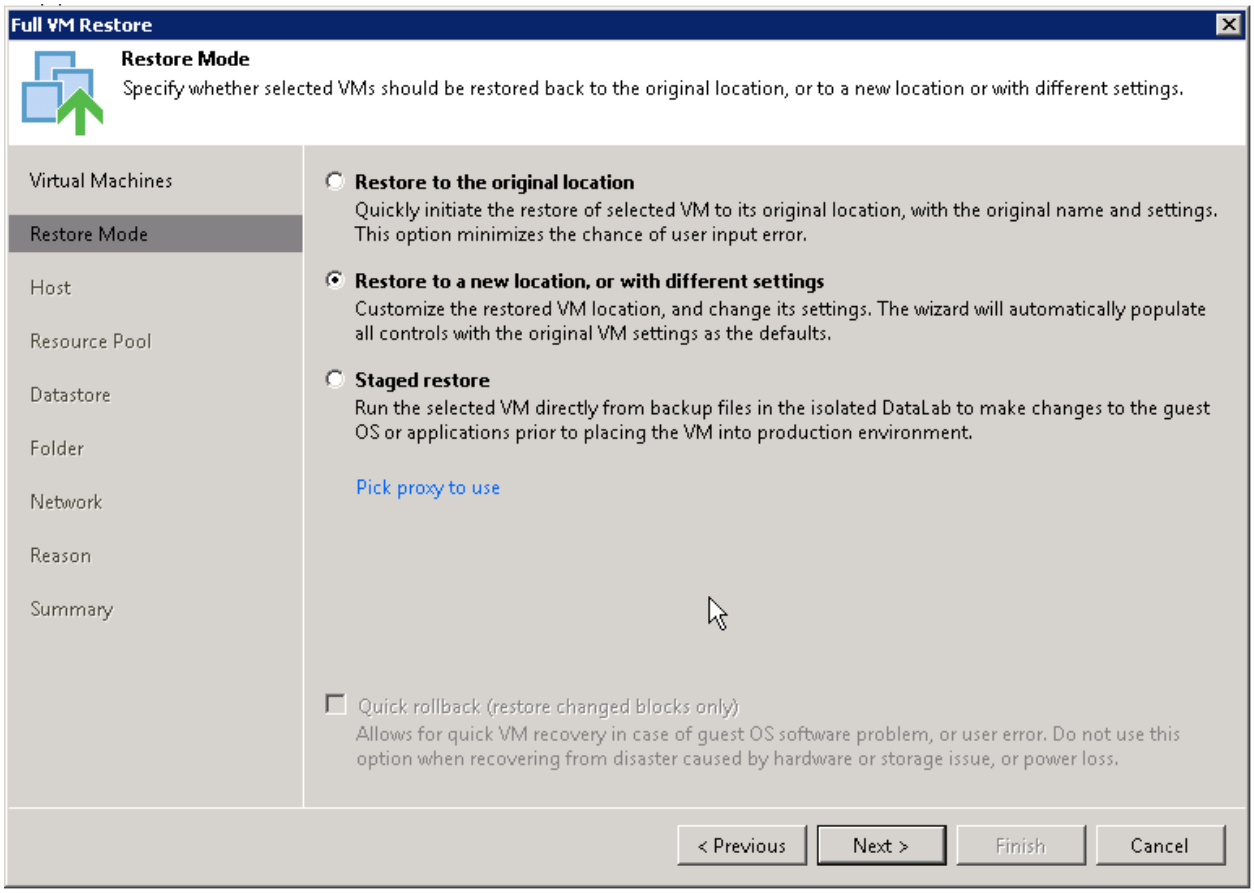


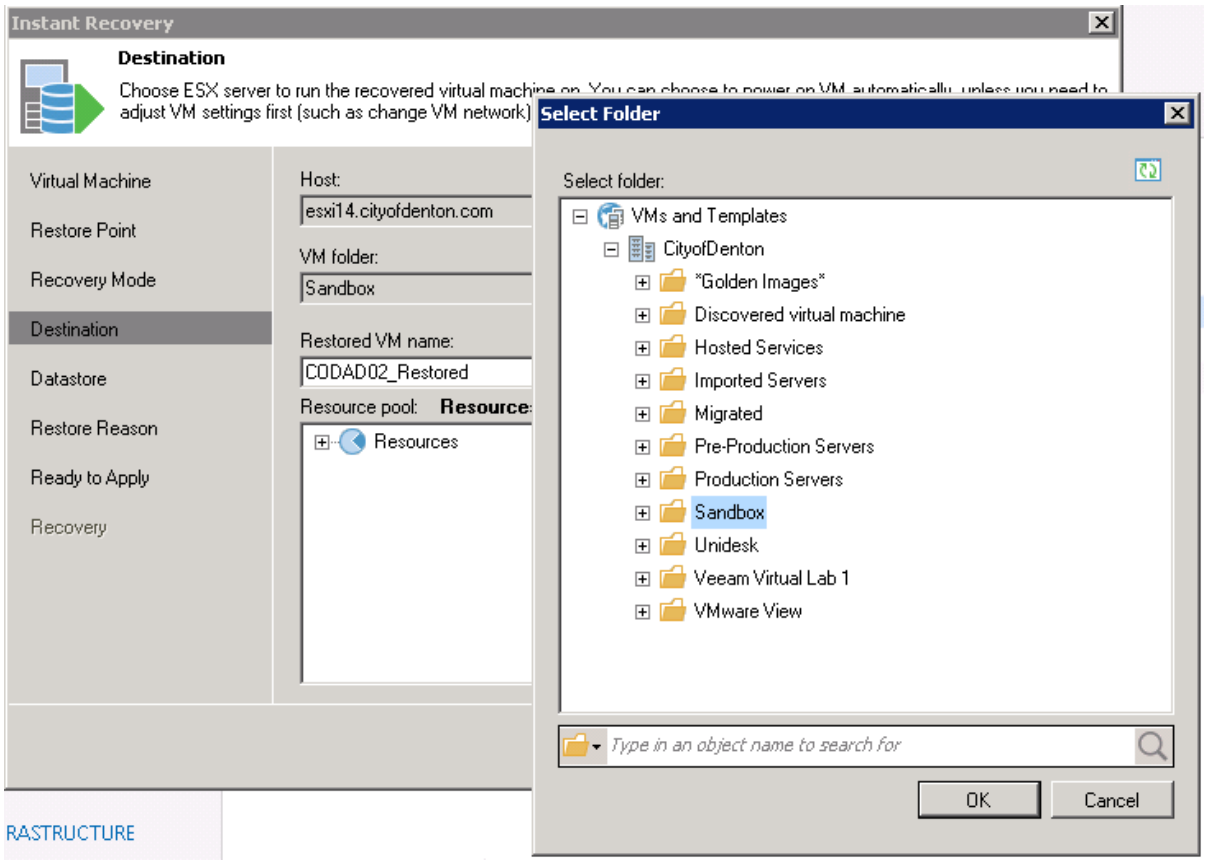
The most recent restore point is selected.



If VM to be recovered has been removed, original location can be selected. For this restore exercise, new location is selected.



For this exercise, we'll restore the VM to the sandbox location.



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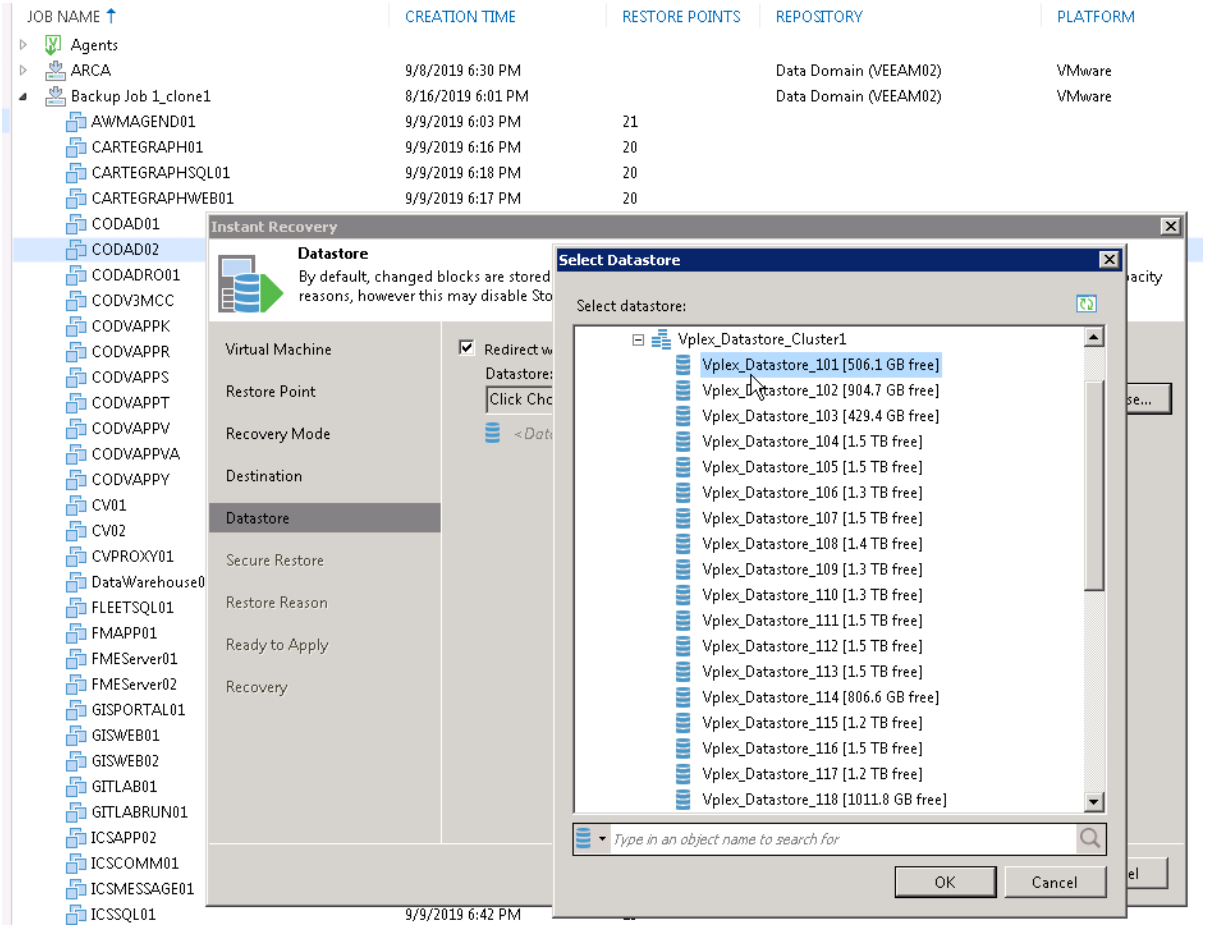

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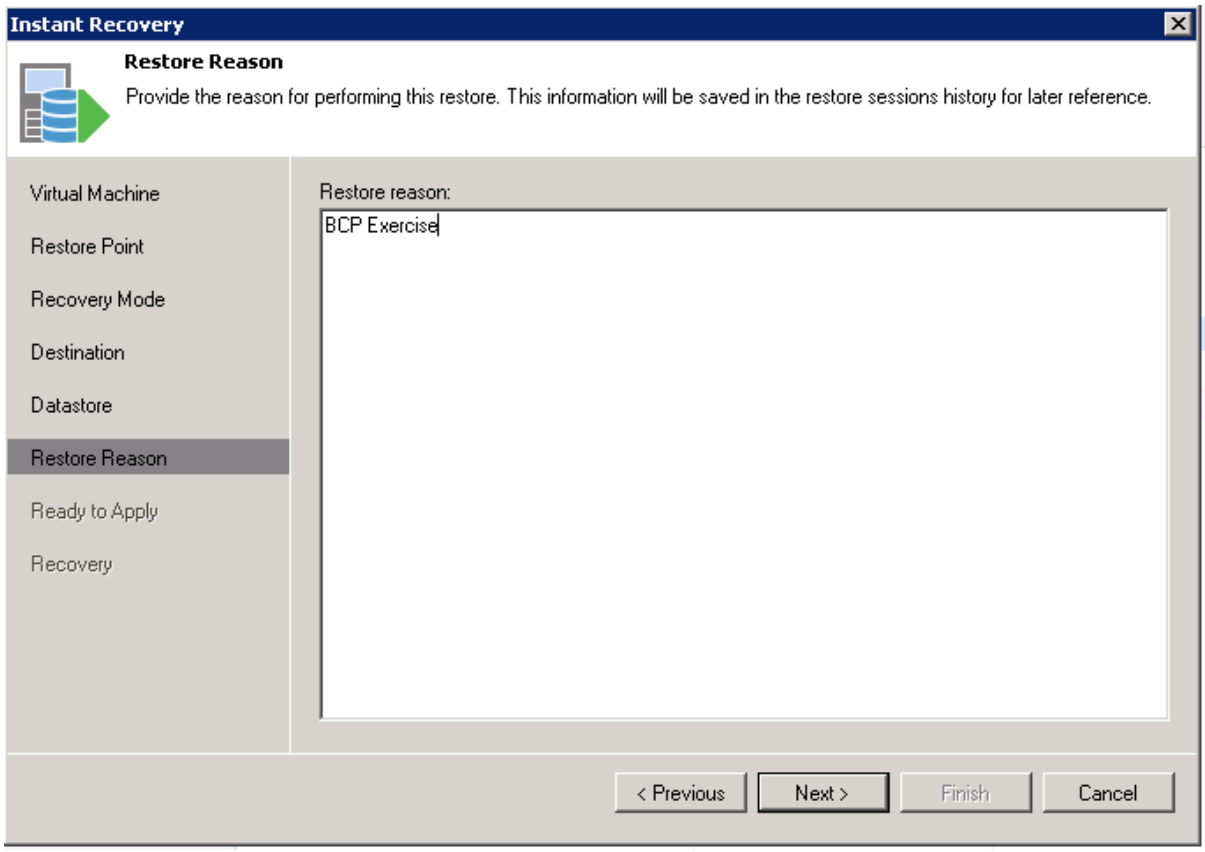

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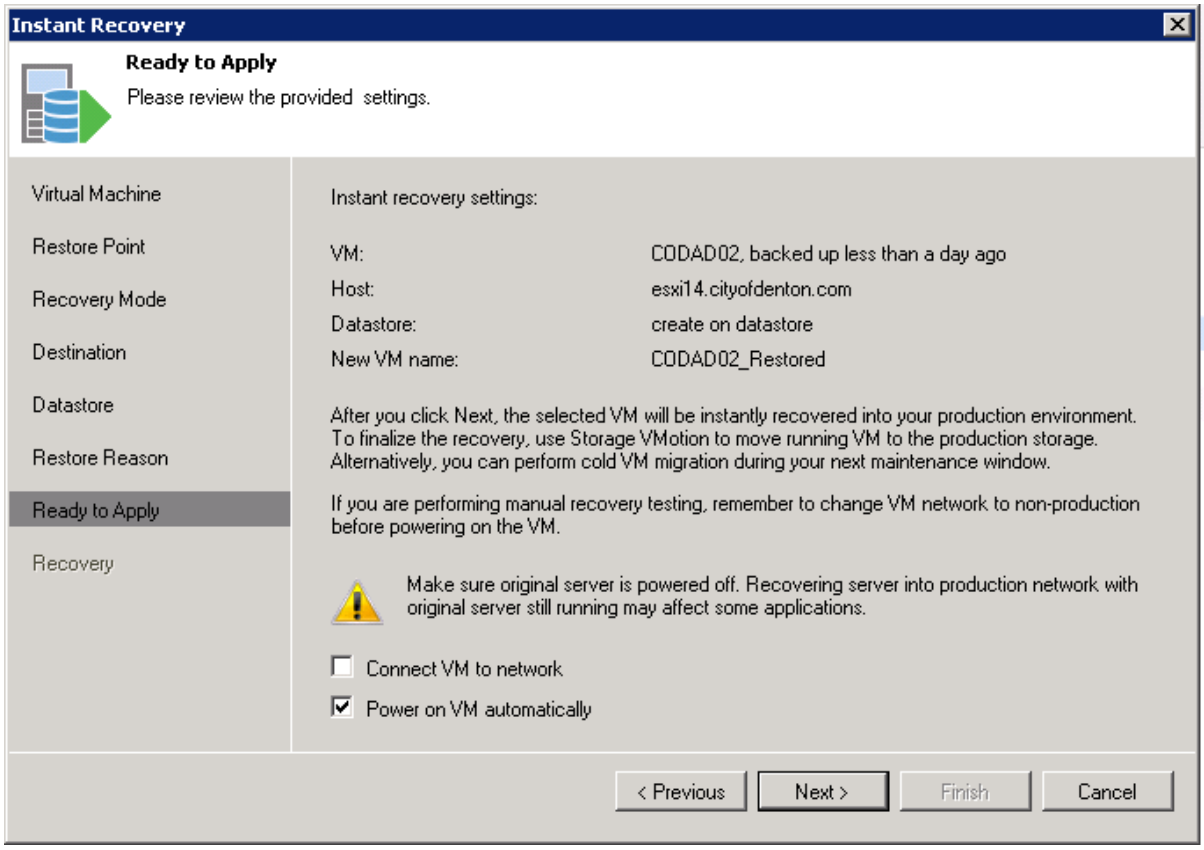

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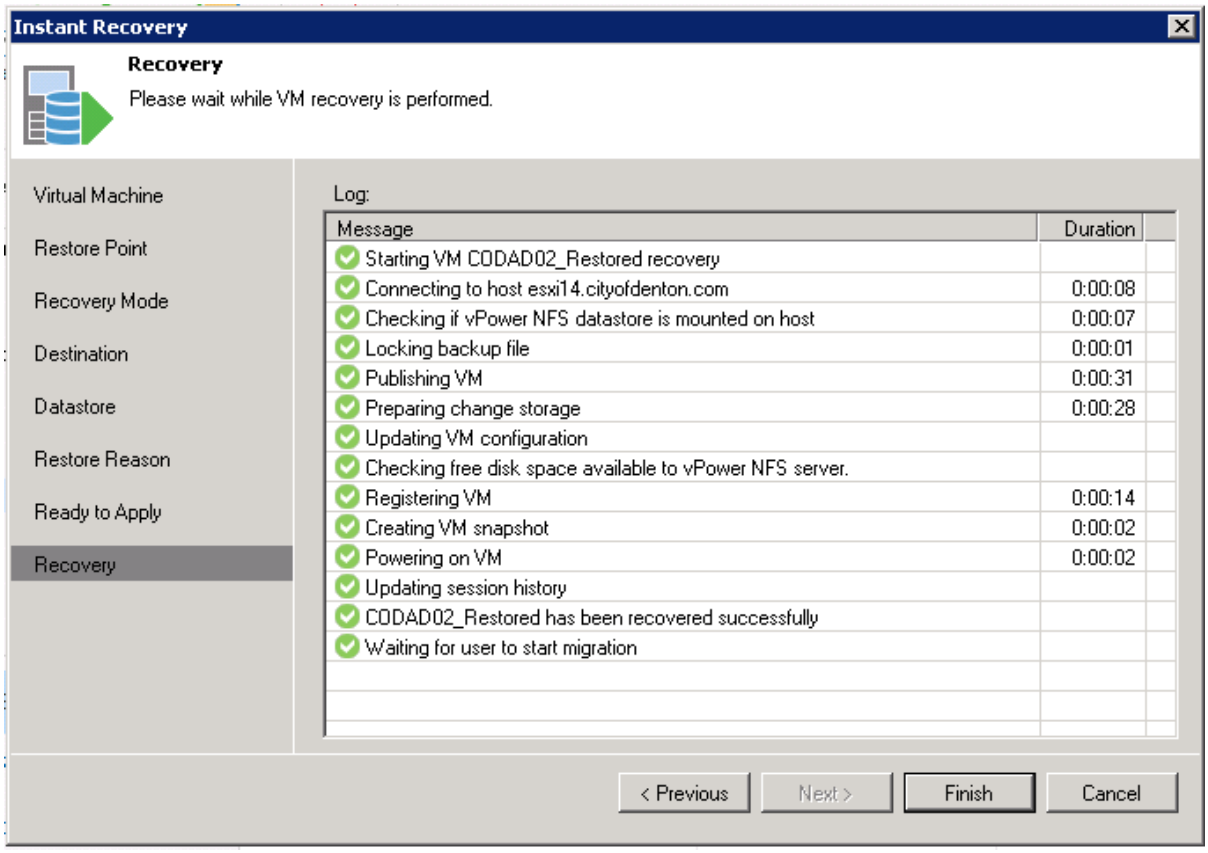

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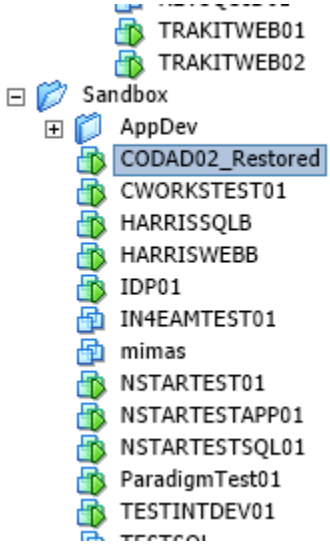

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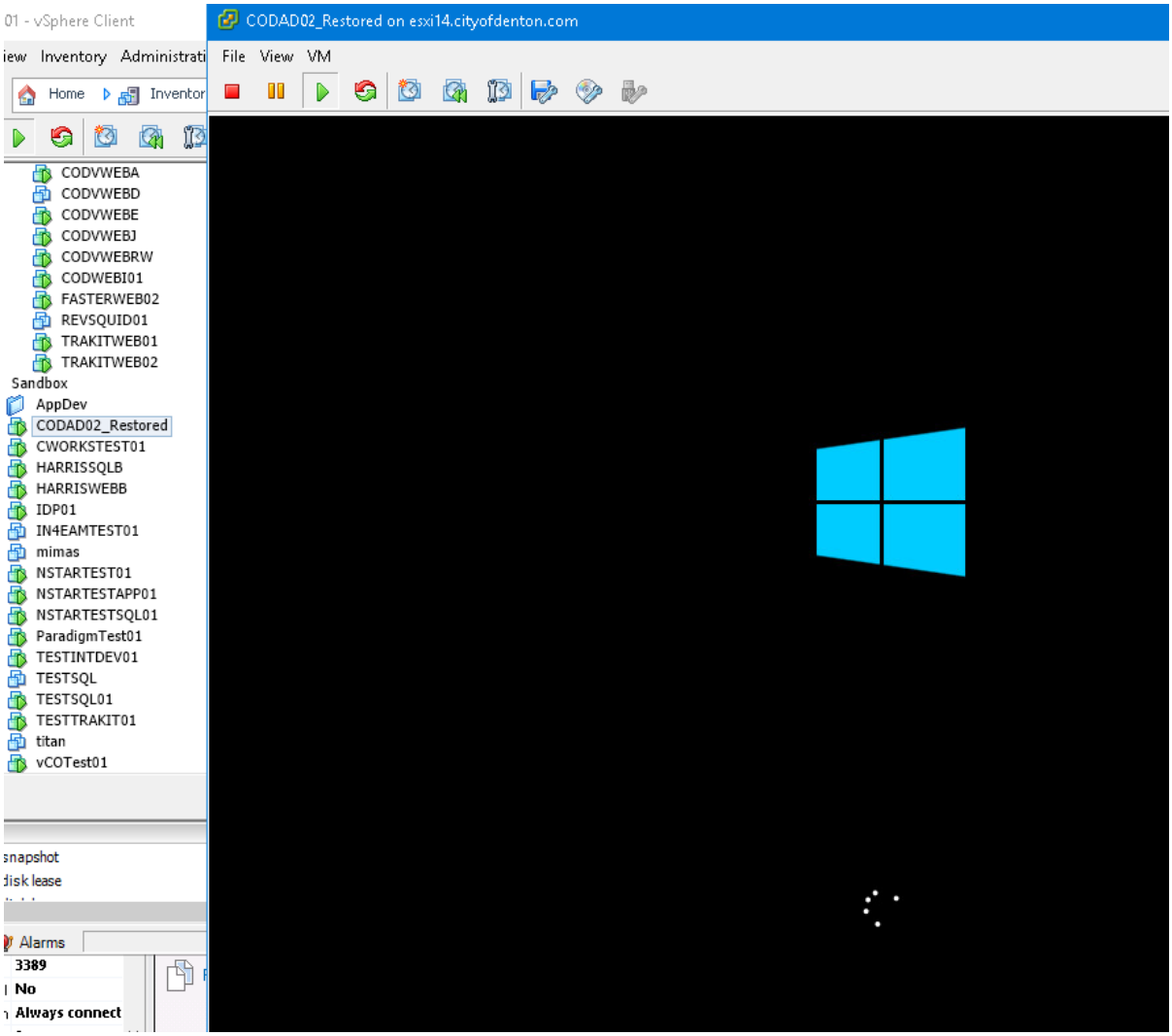

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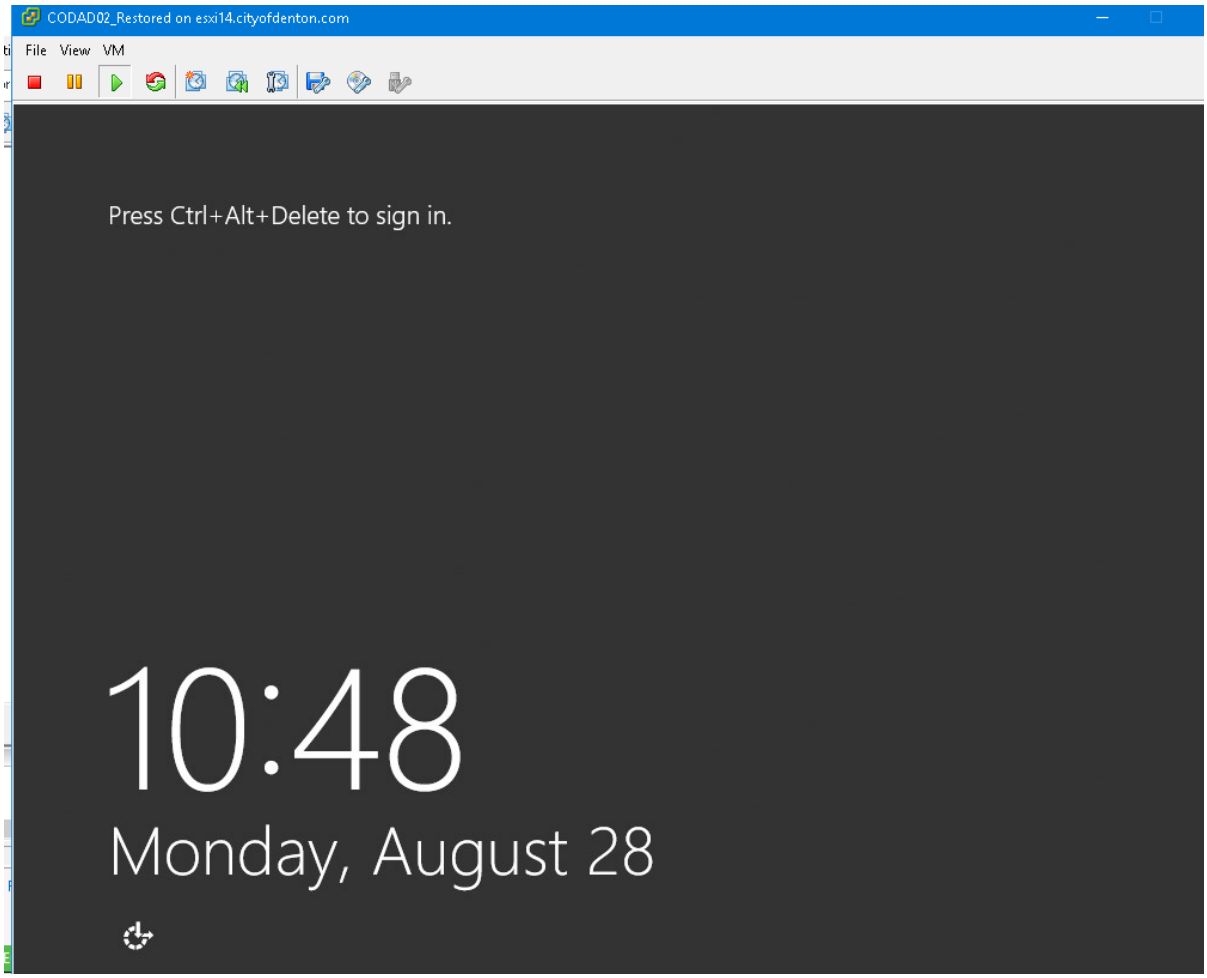

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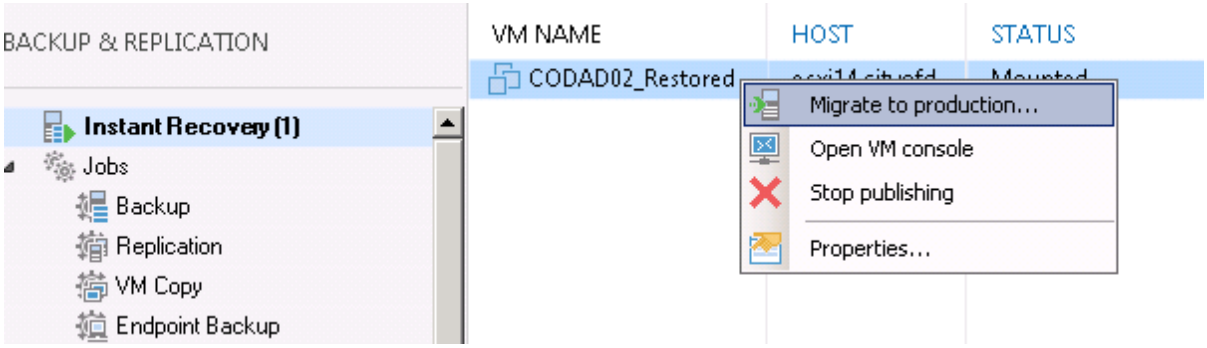

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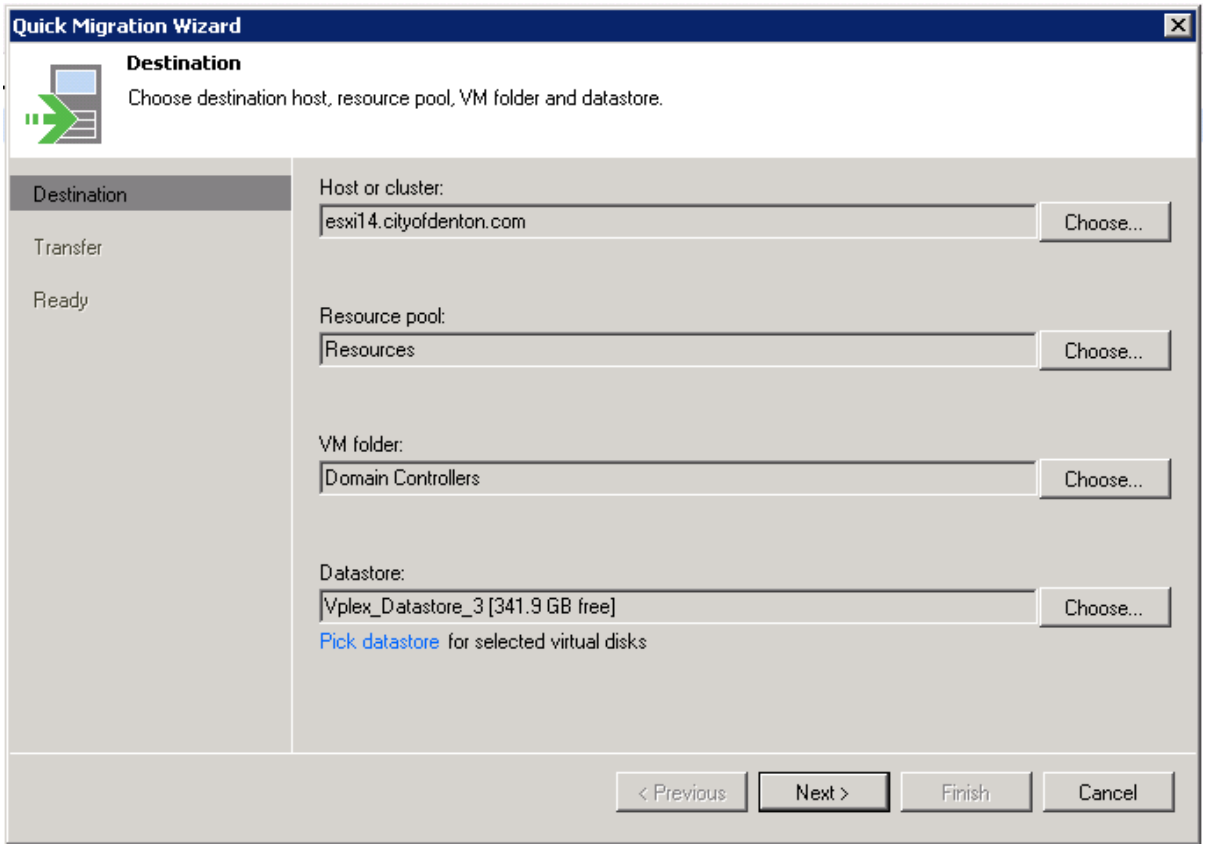

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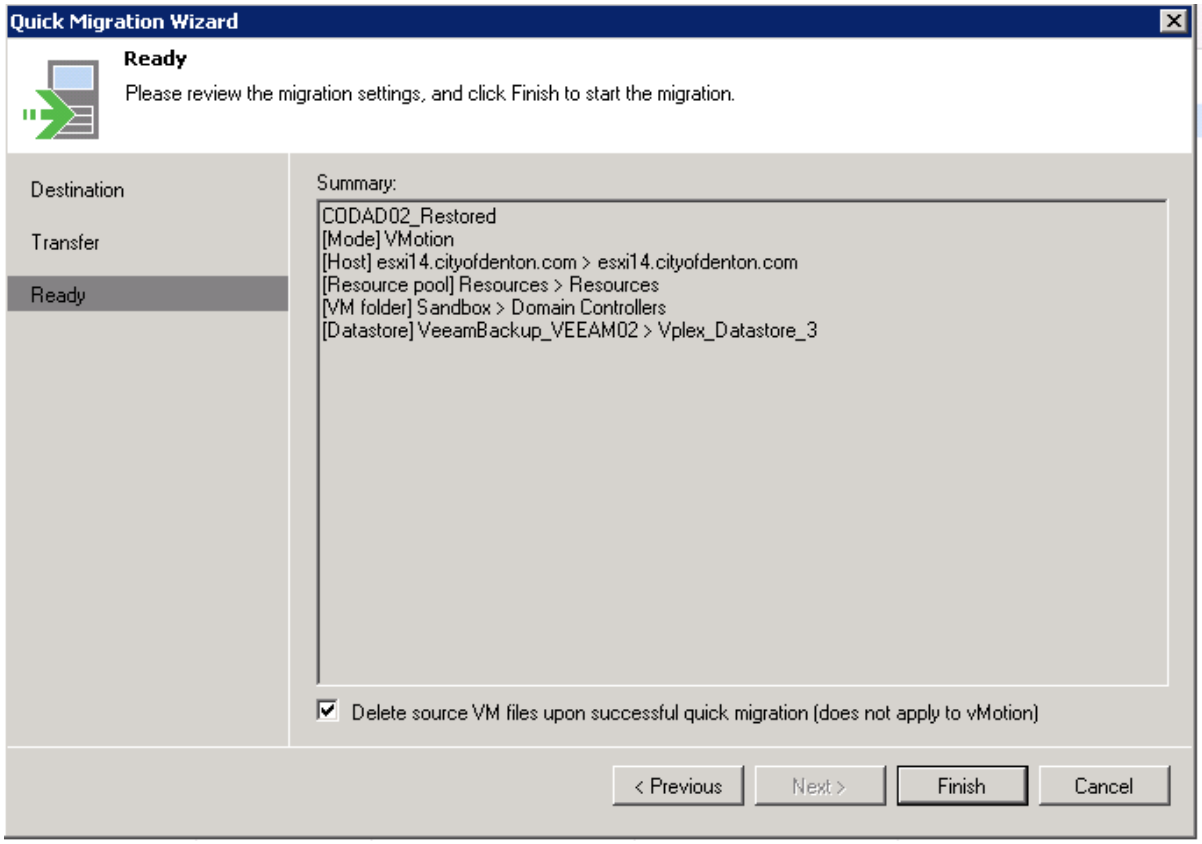

(Sample Department)
Business Continuity Checklist

No.	Issue	Yes	No
1.	Does the Department overview still accurately summarize the unit's purpose, citizen base and recovery time frames?		
2.	Are there any new functions that need to be listed in the functions and priorities grid?		
3.	Are the recovery priorities still appropriate for each function?		
4.	Are there any new required systems or any systems that need to be removed?		
	Answer the following questions for each procedure:		
5.	Is this procedure listed in the order that it would need to be performed?		
6.	Is the purpose still accurate?		
7.	Are the people in the "Assigned To" and "Alternate" roles still the best people to carry out the responsibility?		
8.	Are the steps in the procedure still accurate? Should any steps be changed, removed or added?		
9.	Are there any contact names or phone numbers listed within the procedure that need to be changed?		
10.	Does this procedure provide the appropriate level of detail, and is it reflective of how this function would be performed in a recovery situation?		
11.	Have questions 6-11 above been answered for Procedure 1?		
12.	Have questions 6-11 above been answered for Procedure 2?		
13.	Have questions 6-11 above been answered for Procedure 3?		
14.	Have questions 6-11 above been answered for Procedure 4?		
15.	Have questions 6-11 above been answered for Procedure 5?		
16.	Are each of the documents listed as critical to the recovery process still necessary?		
17.	Are there any new documents that need to be added to the list?		
18.	Are each of these documents stored as listed in the section?		
19.	Do any new resources need to be added to the required resources section?		
20.	Are there any resources that are no longer necessary?		
21.	Is the response team listing still accurate?		
22.	Is the Response Team Leader Checklist for this Department accurate?		
23.	Has the Department call tree in Part 5 been reviewed and updated?		
24.	Is the Department alternate recovery location information still accurate?		

General Recovery Update Checklist

	Issue	Yes	No
1.	Has the Operations Overview changed in any way? If so, are the changed identified and documented?		
2.	Are there any additional business units that need to be added to the plan? If so, have these been identified and updated?		
3.	Have the sections in the plan layout, or their descriptions changed in any way? If so, are these changes identified and documented?		
4.	Have the policies or objectives for COD's Business Continuity Plan changed? If so, are these changes updated in the plan?		
5.	Have COD's Business Continuity Plan assumptions changed or are there any additional assumptions to be added?		
6.	Are there any additional risks that need to be documented?		
7.	Have the time criticality classifications changed or are there new ones that need to be added? If so, are the time frames specified?		
8.	Have the overall objectives for the Recovery Management Team changed in any way? If so, are these changes identified and documented?		
9.	Have any of the members identified as part of the Recovery Management Team left the firm? If so, has the new member's information (name, phone number and beeper) been added to the contact list?		
10.	Have the Recovery Management Team Leader responsibilities changed or are there new ones to be added?		
11.	Have the External Communications responsibilities changed or are there new ones to be added?		
12.	Have the TS Leader responsibilities changed or are there new ones to be added?		
13.	Have the EOC Manager responsibilities changed or are there new ones to be added?		
14.	Have the Department Response Teams changed in any way? If so, are the roles, primary and alternate contacts updated?		
15.	Have the Response Team Leader's responsibilities changed or are there new ones to be added?		

	Issue	Yes	No
16.	Have the Employee Relations Leader responsibilities changed or are there new ones to be added?		
17.	Have the Reprographics Team Leader responsibilities changed or are there new ones to be added?		
18.	Has the Emergency Alert in the Plan Activation changed?		
19.	Has the Damage Assessment Form in the Plan Activation changed? If so, are the changes identified and updated?		
20.	Have the Notification Procedures or Notification Script in the Plan Activation changed? If so, are the changes identified and updated?		
21.	Has the command center changed? If so, is the new command center information updated in the plan?		
22.	Has the Call Trees Notification Script changed? If so, is the contact information updated?		
23.	Are there any changes in the Status Line Update?		
24.	Are there any media or citizen communication changes?		
25.	Is the Recovery Log form current and a copy included in the plan?		
26.	Have the procedures for the off-site storage vendor changed? If so, are these changes updated in the plan?		
27.	Are there any additional materials that need to be included in the Off-site Recovery Box?		
28.	Have there been any changes in the Telephone Re-Routing procedures?		
29.	Have there been any changes in the Mail Re-Routing procedures?		
30.	Are there any changes in the employee/equipment requirements? If so, are the changes identified and updated?		
31.	Has the alternate site changed? If so, are the travel directions, phone and fax numbers updated in the plan?		
32.	Is there any additional information that needs to be added or changed in the EmployeeInjury Report Form? If so, is the form current and a copy included in the plan?		
33.	Is the Employee Fatalities section accurate and complete?		
34.	Are there any changes or updates for travel, food, supplies and expense reports including change of cost center, that need to be included in the plan?		
35.	Are there any changes or updates required in the Plan Exercise section?		
36.	Are there any changes or updates required in Plan Maintenance section?		

Technology Services Update Check List

	Issue	Yes	No
1.	Has the Information Technology Overview changed in any way? If so, are the changes identified and documented ?		
2.	Are there any changes in the COD's Systems Diagram? If so, are the changes identified and documented?		
3.	Are there any additional UNIX servers that need to be documented? Have the roles for these servers changed?		
4.	Are there any additional NT servers that need to be documented? Have the roles for these servers changed?		
5.	Have there been any changes in the critical applications, purpose or departments using the corresponding applications?		
6.	Have the application priorities changed or are there new ones to be added?		

Appendices Update Checklist

	Issue	Yes	No
1.	Have the Call Tree Notification Procedures changed? If so, are these identified and documented?		
2.	Has the alternate site/command center changed? If so, are the travel directions, phone and fax numbers updated in the plan?		
3.	Are there any changes in the Status Line Update? If so, are these changes updated in the Plan?		
4.	Are there any new Communications Guidelines that need to be added or that need to be changed?		
5.	Is the Client Communication Log form current and a copy included in the plan?		
6.	Does any additional software, manuals or forms need to be added to the Off-Site Recovery Box Inventory?		
7.	Have any of the Departments been relocated to another floor or have there been any changes in the floor layout that need to be recorded in the Damage Assessment Form?		
8.	Is the Recovery Log form current and a copy included in the plan?		
9.	Are the phone numbers for the City of Denton current and updated?		
10.	Are there any changes in the Incident Investigation Report? If so, is the updated form included in the plan?		
11.	Have there been any changes in the Mail Re-routing Procedures?		
12.	Have any of the airmail companies contact information changed? If so, have they been notified of the re-routing processes?		
13.	Have any of the mail account numbers changed? If so, have these been updated in the plan?		
14.	Are there any changes in the Office Supplies Ordering Procedures? If so, are these identified and updated in the plan?		
15.	Is the vendor information for the office supplies ordering current (Name, Address, Phone and Fax Number)?		
16.	Have the employee and equipment requirements for the different Departments changed? If so, are the entries added and totals updated?		

Business Continuity Plan Maintenance Log

Description of Update (Sections, info. added or deleted, etc.)	Date Updated	Updated By
Updated complete "BCP" book.	April, 2007	Bobbie Arashiro Betty Evans
Updated "BCP" book based on Technology Services (not individual Department section).	July, 2009	Bobbie Arashiro Betty Evans
Updated "BCP" book based on Technology Services (not individual Department section).	Sept., 2010	Bobbie Arashiro Betty Evans
Updated "BCP" book	Aug., 2011	Bobbie Arashiro Betty Evans
Updated "BCP" book	Sept., 2012	Bobbie Arashiro Betty Evans
Updated "BCP" book	Aug, 2013	Bobbie Arashiro Stephanie Padgett
Updated "BCP" book	July, 2014	Bobbie Arashiro Stephanie Padgett
Updated "BCP" book	July, 2015	Bobbie Arashiro Stephanie Padgett
Updated "BCP" book	July, 2016	Stephanie Padgett
Updated "BCP" book	July, 2017	Stephanie Padgett
Updated "BCP" book	July, 2018	Stephanie Padgett
Updated "BCP" book	August, 2019	Stephanie Padgett

BCP Manual Assignment List

Binder/CD	Assigned to:	Date Delivered
BOOKLET	City Manager's Office – City Manager	
USB Drive	City Manager's Office – Deputy City Manager	
BOOKLET/ USB DRIVE	Fire Department – EOC Manager	
USB Drive	Police Department – Police Chief	
BOOKLET/ USB DRIVE	Technology Services – Manager's Copy	
BOOKLET	Technology Services – Off Site Lock Box	
BOOKLET	Technology Services – Reception Area	

Certificate Of Completion

Envelope Id: 488A33E0B51A4517AAF929864059E830
Subject: Please DocuSign: BCP 10.0.pdf
Source Envelope:
Document Pages: 344
Certificate Pages: 5
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-06:00) Central Time (US & Canada)

Signatures: 3
Initials: 0

Status: Completed

Envelope Originator:
Stephanie Padgett
901B Texas Street
Denton, TX 76209
stephanie.padgett@cityofdenton.com
IP Address: 71.221.101.141

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Status: Original
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stephanie.padgett@cityofdenton.com

Location: DocuSign

Signer Events	Signature	Timestamp
Melissa Kraft melissa.kraft@cityofdenton.com Chief Technology Officer City of Denton Security Level: Email, Account Authentication (None)	DocuSigned by: Melissa Kraft 8407288232BE40E... Signature Adoption: Pre-selected Style Using IP Address: 107.77.198.99 Signed using mobile	Sent: 9/19/2019 9:51:58 PM Viewed: 9/19/2019 10:29:46 PM Signed: 9/19/2019 10:29:50 PM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
Mario Canizares mario.canizares@cityofdenton.com Deputy City Manager City Manager's Office Security Level: Email, Account Authentication (None)	DocuSigned by: Mario Canizares 6298D023C9C341B... Signature Adoption: Pre-selected Style Using IP Address: 129.120.6.150	Sent: 9/19/2019 10:29:52 PM Viewed: 9/20/2019 3:39:39 PM Signed: 9/20/2019 3:39:51 PM
Electronic Record and Signature Disclosure: Accepted: 9/20/2019 3:39:39 PM ID: 54622564-3c88-4eb5-9a8a-cfdd7a42b0a9		
Michael Penaula michael.penaluna@cityofdenton.com Security Level: Email, Account Authentication (None)	DocuSigned by: Michael Penaula 68A5D4174D334FA... Signature Adoption: Pre-selected Style Using IP Address: 129.120.6.150	Sent: 9/20/2019 3:39:54 PM Viewed: 9/23/2019 8:03:42 AM Signed: 9/23/2019 8:04:02 AM
Electronic Record and Signature Disclosure: Accepted: 9/23/2019 8:03:42 AM ID: ebe9504d-e296-4d18-a238-f78f70bbc6ba		

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	9/20/2019 3:39:54 PM
Certified Delivered	Security Checked	9/23/2019 8:03:42 AM
Signing Complete	Security Checked	9/23/2019 8:04:02 AM
Completed	Security Checked	9/23/2019 8:04:02 AM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

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Operating Systems:	Windows2000? or WindowsXP?
Browsers (for SENDERS):	Internet Explorer 6.0? or above
Browsers (for SIGNERS):	Internet Explorer 6.0?, Mozilla FireFox 1.0, NetScape 7.2 (or above)
Email:	Access to a valid email account
Screen Resolution:	800 x 600 minimum
Enabled Security Settings:	•Allow per session cookies •Users accessing the internet behind a Proxy Server must enable HTTP 1.1 settings via proxy connection

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