Construction Management

AutoCAD on Citrix

Project Plan

Version 1.0 ● June 6, 2013

Minnesota State University, Mankato

PROJECT PLAN

Information and Technology Services

AutoCAD on Citrix

|  |  |
| --- | --- |
| VERSION: 1.0 | REVISION DATE: 6/6/2013 |

*Approval of the Project Plan indicates an understanding of the purpose and content described in this deliverable. Approval of the Project Plan constitutes approval of the project planning results and hereby certifies the overall accuracy, viability, and defensibility of the content and estimates. By signing this deliverable, each individual agrees the project has been planned effectively as described herein.*

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Contents

Contents

[Section 1. Project Overview 2](#_Toc358883479)

[1.1 Project Description 2](#_Toc358883480)

[1.2 Project Scope 2](#_Toc358883481)

[1.3 Assumptions 3](#_Toc358883482)

[1.4 Constraints 3](#_Toc358883483)

[Section 2. Project Organization 4](#_Toc358883484)

[2.1 Project Structure 4](#_Toc358883485)

[2.2 Roles and Responsibilities 4](#_Toc358883486)

[Section 3. Project Start-Up 5](#_Toc358883487)

[3.1 Project Schedule 5](#_Toc358883488)

[3.2 Budget 5](#_Toc358883489)

[3.3 Delegated Purchase Authority 6](#_Toc358883490)

[Section 4. Monitoring and Control 7](#_Toc358883491)

[4.1 Change Management 7](#_Toc358883492)

[4.2 Issue Management 7](#_Toc358883493)

[4.3 Status Reporting 7](#_Toc358883495)

[Section 5. Deliverables 8](#_Toc358883496)

[Section 6. Configuration Management 9](#_Toc358883497)

[6.1 Configuration Management Approach 9](#_Toc358883498)

[6.2 System Technical Configuration 9](#_Toc358883499)

[Section 7. Risk Management 10](#_Toc358883500)

[7.1 Risk Assessment 10](#_Toc358883501)

[7.2. Risk Tracking 11](#_Toc358883502)

[7.3 Risk Reporting 11](#_Toc358883503)

[Section 8. Project Transition 12](#_Toc358883504)

[8.1 Closeout Approval 12](#_Toc358883505)

[Section 9. Glossary 13](#_Toc358883506)

[Section 10. Revision History 14](#_Toc358883507)

[Section 11. Appendices 15](#_Toc358883508)

# Section 1. Project Overview

## 1.1 Project Description

This project will enable currently enrolled students and MNSU interns working at MnDOT to utilize AutoCAD and related software through the use of Citrix XenApp as a delivery method. Citrix XenApp will allow the software to be run on the server, but appear to run a user's laptop or workstation from almost any internet connected location. Citrix XenApp will also allow the use of AutoCAD and related software from workstations and laptops outside the MNSU campus.

## 1.2 Project Scope

| **Project Includes** |
| --- |
| Purchase and Setup of 2 Dell PowerEdge R720 servers |
| Installation and Setup of Citrix XenApp 6.5 with Feature Pack 1 |
| Purchase and Installation of 35 Citrix XenDesktop Licenses w/ 1 year of Maintenance |
| Purchase and Installation of 35 AutoDesk AutoCAD Design network licenses (conversion of existing licenses) |
| Purchase and Installation of 35 AutoDesk AutoCAD Civil 3D network licenses (conversion of existing licenses) |
| Installation of Primavera P6, Sage100 Contractor v12.1 |
| Setup of printing through the MavPRINT system. |

| **Project Excludes** |
| --- |
| Purchase of lab desktop computers |
| Purchase of software licensing not listed above |
| Setup of printing outside of the MavPRINT system |

## 

## 1.3 Assumptions

| **Assumptions** |
| --- |
| All users must have a course enrollment within Construction Management or Civil Engineering. Construction Management and Civil Engineering will need to let ITS know which courses will need access to software specified in scope above. Access will be automatically maintained through course enrollments provided by the Registrar’s office. |
| Access from off-campus is provided, but performance cannot be guaranteed**\***. |
| The system is expected to support 35 concurrent users\*\* |
| Printing will be supported through the existing MavPRINT system. |
| Annual maintenance of the Citrix licensing is required and will be paid for by Construction Management (see section 3.3 Delegated Purchase Authroity). |
| The lifetime of the server hardware is expected to be 5 years. Incremental upgrades may be required and will be addressed if/when they are needed. |

\* Access from MnDOT networks route through the statewide Wide Area Network and should still have an EXCELENT experience (see section 7. Risk Management).

\*\* The system is expected to support a classroom of 35 concurrent users. It is understood that not all 35 users can “render” drawings at the same time.

## 1.4 Constraints

*Describe the limiting factors, or constraints, that restrict the project team’s options regarding scope, staffing, scheduling, and management of the project.*

| **Constraints** |
| --- |
| Student Laptop screen size may be a limiting factor when viewing AutoCAD drawings due to limited screen size options on laptops. |
| ITS has no direct control over networks and systems located off-campus. Performance and support for off-campus users will be on a best-effort basis. |
| ITS may require additional assistance in the configuration of the hardware and software. Additional costs may be incurred if this assistance is required. ITS will discuss any potential additional costs with Construction Management if they are needed. |

# Section 2. Project Organization

## 2.1 Project Structure

* Project Lead: Michael Menne (michael.menne@mnsu.edu, x5705)
* Systems Administrator: Michael Menne (michael.menne@mnsu.edu, x5705)
* Systems Administrator: Mark Wildt (mark.wildt@mnsu.edu, x1368)
* Application Support: Tim Wentz (timothy.wentz@mnsu.edu, x6922)
* Chair, Construction Management: Brian Wasserman (brian.wasserman@mnsu.edu, x1875)
* Faculty, Construction Management: Leah Roue (leah.roue@mnsu.edu, x5925)
* Jeff Roberts, Nvidia Corporation Technical Resource ([jeff@nvidia.com](mailto:jeff@nvidia.com), 248-491-8494)
* Dave Fiske, Citrix Corporation Systems Engineer ([dave.fiske@citrix.com](mailto:dave.fiske@citrix.com), 763-445-9832)
* Wesley Braden, Citrix Territory Manager ([wesley.braden@citrix.com](mailto:wesley.braden@citrix.com))
* Pat Meyers, Dell Corporation Systems Engineer (pat\_meyers@dell.com)

## 2.2 Roles and Responsibilities

*Describe roles and responsibilities for the project structure and external stakeholders as identified above. A Project Contact Register or its equivalent is developed as part of this section.*

| **Role** | **Responsibility** |
| --- | --- |
| Project Lead | Coordinate and Communicate with Stakeholders regarding progress |
| Systems Administrators | Purchase, Install and test hardware components |
| Systems Administrators | Install and Test of Software components |
| Application Support | Purchase, Install and Test of AutoDesk Software components |
| Construction Mgmt Faculty/Chair | Quality Acceptance Testing |
| Dell Corporation | Hardware Support |
| Citrix Corporation | Software Support |
| Nvidia Corporation | Hardware/Software Integration for NVIDIA GPUs |
|  |  |
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|  |  |
|  |  |

# Section 3. Project Start-Up

## 3.1 Project Schedule

| **Project Plan Location** | https://share.mnsu.edu/its/\_layouts/WordViewer.aspx?id=/its/Shared%20Documents/Projects/2013/2013%20-%20CM%20AutoCad%20Citrix%20Project%20Plan.docx&Source=https%3A%2F%2Fshare%2Emnsu%2Eedu%2Fits%2FShared%2520Documents%2FForms%2FAllItems%2Easpx%3FRootFolder%3D%252Fits%252FShared%2520Documents%252FProjects%252F2013&DefaultItemOpen=1 |
| --- | --- |

| **Major Milestone/Deliverable** | **Planned Completion Date** |
| --- | --- |
| Project Acceptance | June 26, 2013 |
| HW/SW Ordering | June 26-27, 2013 |
| Server Arrival and Setup | July 5-12, 2013 |
| HW/SW Configuration | July 15-26, 2013 |
| User Acceptance Testing | July 29-Aug. 2, 2013 |

## 3.2 Budget

| **Key Budget Category** | **Budget Amount** | **Cost Center** |
| --- | --- | --- |
| Server Hardware | $37,000 |  |
| Citrix Licensing | $9,983,05 (35 users x $285.23/user) |  |
| AutoCAD Licensing | $10,150 |  |
| Civil 3D Licensing | $8,740 |  |
| Annual Citrix Support | $1,837.50 (35 users x $52.50/user) |  |
|  |  |  |
|  |  |  |

## 3.3 Delegated Purchase Authority

**Initial Hardware and Software Purchase**

**Option 1)**

I give ITS authority to charge my cost center \_\_\_\_\_\_\_\_ in the amount of $\_\_\_\_\_\_ for the initial purchase of hardware and software for this project.

Brian Wasserman

Construction Management Department Chair

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Option 2)**

I give ITS authority to do a funds transfer in the amount of $\_\_\_\_\_\_ for the initial purchase of hardware and software for this project.

Brian Wasserman

Construction Management Department Chair

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Annual Ongoing Maintenance**

**Option 1)**

I give ITS authority to charge my cost center \_\_\_\_\_\_\_\_ in the amount of $\_\_\_\_\_\_ for annual ongoing maintenance of hardware and software for this project.

Brian Wasserman

Construction Management Department Chair

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Option 2)**

I give ITS authority to do a funds transfer in the amount of $\_\_\_\_\_\_ for annual ongoing maintenance of hardware and software for this project.

Brian Wasserman

Construction Management Department Chair

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Section 4. Monitoring and Control

## 4.1 Change Management

ITS uses a Change Management Board to review any major system changes. Any system changes related to this project will be reviewed by the ITS Change Management Board. Any changes to this system after it has been implemented into production will also be reviewed by the Change Management Board.

## 4.2 Issue Management

## Any issues related to the project during implementation should be communicated to the Project Lead. The Project Lead will then communicate the issue to the appropriate technical resource and communicate the status to the Construction Management stakeholders. Any issues relating to this project after it has been implemented should be directed to the IT Service Desk ([servicedesk@mnsu.edu](mailto:servicedesk@mnsu.edu), x6654) where a trouble ticket will be created and assigned to the appropriate support resource.

## 4.3 Status Reporting

Status Reporting will be done mostly through e-mail updates. As the project progresses, a face to face meeting might be needed. The Project Lead should be involved in any communication between ITS and Construction Management.

# Section 5. Deliverables

**5.1 Deliverables Acceptance**

| **Deliverable** | **Final Approver** | **Stakeholder Signature** |
| --- | --- | --- |
| Project Plan | Brian Wasserman |  |
| Server Hardware Arrival | Michael Menne |  |
| Hardware Configuration | Michael Menne |  |
| Software Configuration | Brian Wasserman/Leah Roue |  |
| Performance Acceptance | Brian Wasserman/Leah Roue |  |

# Section 6. Configuration Management

## 6.1 Configuration Management Approach

*Configuration of the system was derived from conversations between ITS, Citrix, NVIDIA and Dell. The configuration as proposed is based on data from Citrix and NVIDIA that has not yet been publicly published.*

## 6.2 System Technical Configuration

*Server Hardware:*

2 - Dell PowerEdge R720 Servers

* 2 x 8-core Intel Xeon E5-2670 CPUs
* 256GB RAM (16 x 16GB 1600Mhz RDIMMs)
* 4 x 400GB Solid State Value SATA Disks
* 1 x NVIDIA GRID K1 (4 GPUs per card)

*Software:*

* Citrix XenApp 6.5 with Feature Pack 1
* AutoDesk AutoCAD Design 2014
* AutoDesk AutoCAD Civil 3D 2013
* SAGE 100 v12.1
* Primavera 6

# Section 7. Risk Management

## 7.1 Risk Assessment

|  |  |
| --- | --- |
| **Risk Description** | Lead time for server hardware is 2-3 weeks from ordering. Any delay in delivery of the server will impact the timeline of the project. |
| **Risk Impact** | This is the starting point for the project. Significant work on the project cannot be started until the server hardware is received by ITS. |
| **Risk Mitigation** | ITS will request a priority shipment from Dell once the server has been ordered. |
|  |  |
| **Risk Description** | There is a risk that AutoCAD will not perform well on Citrix. |
| **Risk Impact** | This project is based on the assumption that AutoCAD will perform well on Citrix. If AutoCAD does not perform well, project acceptance will be in jeopardy. AutoCAD performing well on Citrix is the foundation of this project. |
| **Risk Mitigation** | ITS has had in-depth discussions regarding configurations with Dell, NVIDIA and Citrix. NVIDIA is recommending either the NVIDIA Grid K1 or Grid K@ graphics card for this solution. Dell supports the NVIDIA Grid series cards in its PowerEdge R720 series servers.  ITS has also discussed the project with Globe University in the twin cities. They have tested up to 5 users with very good results on their architecture using similar hardware to what ITS will be purchasing.  ITS will continue to try reaching someone from Autodesk to confirm requirements with them as well.  If needed, ITS can engage Citrix, Citrix Partner or Autodesk to assist with configuration tuning of the environment to ensure optimal performance. Additional costs may be incurred. |
|  |  |
| **Risk Description** | Students will have the ability to use AutoCAD and related applications off-campus. |
| **Risk Impact** | The user experience will depend on the quality and latency of the broadband connection. |
| **Risk Mitigation** | NVIDIA has given us the following technical guidelines for remote users:  **EXCELLENT** Experience: <30 ms network latency  **GOOD** Experience: 60-80ms network latency  **POOR** Experience: 250ms-500ms network latency (3G/4G cellular connection)  3G/4G Cellular as well as Satellite broadband connections introduce very high latency and are not recommended for use with this solution.  Most home broadband connections would fall into the **GOOD** experience range. Home broadband connections are extremely variable and unpredictable with regards to network latency.  MnDOT offices are connected to the state-wide Wide Area Network. Ping tests to [www.dot.state.mn.us](http://www.dot.state.mn.us) resulted in a 3ms ping time. This should result in an EXCELLENT experience for interns working at MnDOT offices.  On-campus wireless connections should typically fall in between the **GOOD** and **EXCELLENT** experience ranges.  On-Campus wired connections will provide the best experience possible. |
|  |  |
| **Risk Description** | ITS has not previously attempted to install AutoCAD, SAGE100 or Primavera P6 on a Citrix server previously. |
| **Risk Impact** | AutoCAD, Sage100 and Primavera P6 are the foundations of this project. |
| **Risk Mitigation** | ITS has built in additional setup and testing time to account for this risk. AutoCAD 2013, Sage100 and Primavera P6 and their respective companies have published information on installing these in a Citrix environment. Links to documentation published by vendors is located under in Section 11. Appendices. |
|  |  |
| **Risk Description** | Sage100 has not always liked MavDISK in the past. |
| **Risk Impact** | Sage100 is a foundational requirement of this project. |
| **Risk Mitigation** | ITS will engage Sage prior to and during setup and testing as needed to ensure we are using the product in the best possible environment. |

### 

## 7.2. Risk Tracking

Risks will be tracked in the Risk Management section of the project plan.

## 7.3 Risk Reporting

Additional risks will be reported to all stakeholders by the Project Lead. Risks will be classified by Major (project timeline impacting) or Minor (project impacting, not affecting implementation).

# Section 8. Project Transition

## 8.1 Closeout Approval

By signing below, I agree that all project deliverables have been accepted and the project has been completed to my satisfaction.

|  |  |
| --- | --- |
| **Brian Wasserman**  **Construction Management**  **Department Chair** |  |

# Section 9. Glossary

*Define all terms and acronyms required to interpret the Project Plan properly.*

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# Section 10. Revision History

*Identify changes to the Project Plan.*

| **Version** | **Date** | **Name** | **Description** |
| --- | --- | --- | --- |
| 1.0 | 6/6/203 | Michael Menne | Project Draft |
|  |  |  |  |
|  |  |  |  |
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# Section 11. Appendices

System Requirement for AutoDesk Citrix Ready Products

<http://usa.autodesk.com/adsk/servlet/ps/dl/item?id=16785740&linkID=9240617&siteID=123112>

AutoCAD Performance Recommendations for Citrix XenApp

<http://usa.autodesk.com/adsk/servlet/ps/dl/item?id=16755552&linkID=9240617&siteID=123112>

Primavera P6 Setup under Citrix

<http://docs.oracle.com/cd/E16688_01/Technical_Documentation/Terminal_Services_and_Citrix/Terminal%20Services%20and%20Citrix.pdf>

Sage100 Supported Platform Matrix

http://www.pskansas.com/pdfdownloads/d104195.aspx