



## Capabilities Statement

### **Mission Statement**

Empowering our customers, partners, and employees to succeed by providing superior integrated technology solutions built on a foundation of innovation, collaboration, and results. We provide **Computing and Communications Integration...C2i Solutions.**

### **Complete Solutions Provider**

C2i is a **Veteran-Owned Small Business** (VOSB), and MBE Certified complete solution provider of enterprise information systems and networks targeted to the government, homeland security, and public sector markets. C2i provides up front problem/requirements analysis and solution design, architectural expertise on hardware, operating systems, and software applications, proof-of-concept demonstrations, and project management. The end result is seamless implementation of mission-defined, net-centric, operational and production-grade solutions.

C2i Solutions, Inc. provides technology consulting, systems integration, security and communications interoperability solutions by integrating best of breed COTS IT Infrastructure, Security, Networking & Communications technology, software, and professional services as an **IT SYSTEMS, INFORMATION SECURITY and SECURE COMMUNICATIONS INTEGRATOR**. C2i Solutions has a distinct focus on federal agencies, and public sector entities that require IT infrastructure transformation expertise, information protection, and data access security solutions for secured environments. C2i supports and provide horizontal market solutions for custom tactical, mobile and deployable systems for the military, emergency preparedness, public safety, first responder, and homeland security needs of our nation.

### **C2i Capabilities and Experience**

Our value-added services include infrastructure, network, data center and comprehensive security solutions. We also provide hardware and software solutions with complete integration and national deployment capabilities. In addition, we provide augmented inventory, consolidation, configuration, and verification of specific custom hardware and software solutions at our targeted customers. From concept to completion, C2i can help you meet all aspects of your technical service needs and business objectives. As your technology business partner, C2i can analyze your organizational challenges and provide cost-effective, reliable and comprehensive information systems solutions to meet the challenges facing your business today, tomorrow and in the future. With our focus on customer service, our philosophy defines our culture and drives our success, setting us apart from other technology organizations. Founded on the principles of exceptional customer service, you can count on C2i to be your one source for all your technology needs.



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## **Strategic Diversity Initiative**

**Strategic:** [adj.] (1) *Highly important to or an integral part of a strategy or plan.* (2) *Relating to or concerned with strategy.*

**Diversity:** [n.] (1) *the process of acknowledging differences through action. In organizations, this involves welcoming differences by developing a variety of initiatives at the management and organizational levels to create a culture in which all organizations - regardless of size or ownership have the opportunity to flourish, based on performance.*

C2i Solutions maintains a **Strategic Diversity Initiative** as a proactive solution to the growing challenges large corporations and organizations are encountering as they strive to achieve diversity objectives combined with forward-leaning insights to solve both current and future technology addressable challenges. C2i Solutions, as a veteran-owned small business as defined by the Small Business Administration (SBA), and The Veterans Administration is building a coalition of diverse partners and organizations with similar business objectives and a demonstrated commitment to high-quality products and services. Our portfolio of organizations is comprised of organizations with strong records of past performance and a history of uncompromising technical expertise and customer relationship management.

These partnerships include:

- Small Businesses
- Woman-Owned Businesses
- Historically Black Colleges and Universities (HBCU)
- Hub-Zone Certified Businesses
- Very Small Business
- 8(a) Certified Businesses
- Service-Disabled Veteran-Owned Business

Agencies and organizations in our consortium have commercial as well as federal government and public sector business expertise, nationwide office locations, contracting vehicles that support streamlined acquisition strategies, and security clearances (personnel and building) to facilitate classified engagements. With our comprehensive network of diverse agencies and organizations, we can assist with any strategic initiative your organization may have for meeting its diversity needs.

Our Strategic Diversity Initiative is a result of the vast experience we have accumulated in becoming a small business leader in the IT Infrastructure, Security, Networking, Professional Services, and Communication Software markets. Our large, often prime-contractor, business partners have often inquired about our relationships with other emerging organizations, and this initiative is our way of formally recognizing the global need for enhanced relationships with diverse agencies and organizations and a key deliverable for a value-added component to our relationships with customers and partners.

C2I can serve as the single interface to a wide-range of agencies and organizations with an extensive array of technical skills and capabilities or completely execute a diversity program for your organization. The options are endless. If diversity is truly a goal, C2I has the solution.



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## PRESS RELEASE

**APEX, NC –October 1, 2006** – Net Direct Systems (NDS) has elected to spin-off its emerging Government Sector to form **C2i Solutions, Inc.** and transition the business to the leadership of Earnest L. Williams, principal owner and CEO of C2i Solutions, Inc. (C2i). C2i provides technology consulting, systems integration and security solutions by integrating best of breed COTS IT Infrastructure, security, network technology and professional services as an IT Systems and Information Security Integrator.

C2i is focused on delivering business tools and business know-how to the government market with a distinct mission to serve federal agencies and public sector entities that command IT infrastructure transformation expertise, legacy systems and application migration services, information protection, network optimization and data access security solutions. C2i offers a comprehensive suite of products and services that support the requirements of government organizations for regulatory compliance, mitigation of security exposure, and network functionality, and in addition supports the mission of the DoD for net-centric operations and communications.

Traditionally, information technology VARs and solution integrators that sell to vertical markets focus solely on the industry's traditional product lines and complementary service offerings. C2i strives to present a unique value proposition that helps its clients improve mission readiness, operational delivery capability, a reduction of sustainment costs, and compliance with certifications, security and regulatory requirements. C2i Solutions' security offerings will encompass integrated solutions for Data Protection (Process, Access, Storage, and Transmit) as well as Design, Deployment, Integration and Remediation Services.

“C2i Solutions will focus on delivering critical capabilities for systems and security modernization initiatives in the government sector. A critical component is our ability to assist our government clients in achieving their diversity acquisition and procurement objectives”, says Earnest Williams, CEO. C2i leverages strategic alliance agreements **with Hewlett Packard (HP), IBM Corporation (IBM), McAfee-Secure Computing, Microsoft, Motorola, Federal Signal/Codespear, Western Datacom, Shared Data Networks, Arrow SBM and other leading solution providers and large systems integrators as a means of providing continuity of service and mission-defined solution offerings for the current and future clients of C2i.**

“We recognized a tremendous market opportunity to bring dedicated focus to serve the mission-critical technology needs in the government sector. We envision a strong strategic partnership between NDS and C2i to deliver unique customized solutions that deliver real value”, says Phil Santoni, CEO of NDS.

### Executive Summary

**C2i Solutions, Inc. (C2i)** provides technology consulting, systems integration, and security solutions by integrating best of breed COTS IT Infrastructure, security, network technology and professional services as an **IT Systems and Information Security Integrator**. The company is focused on integrating business tools and business know-how to the government market with a distinct mission to serve federal agencies, and public sector entities that command IT infrastructure transformation expertise, information protection, network optimization and data access security solutions. C2i Solutions sells a comprehensive suite of products and services that support the requirements of C2i Solutions target customers for regulatory compliance, mitigation of security exposure, network functionality and supports the mission of the DoD segment of the market for net-centric operations and communications.



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Though the company is focused on the federal government and public sector vertical markets, C2i Solutions will provide horizontal market segment solutions in the areas of IT infrastructure consolidation, virtualization, security, custom mobile and deployable systems for the emergency preparedness, public safety, and homeland defense needs of our nation. C2i Solutions will enter into a strategic alliance with a market leader in providing eProcurement Services, Systems Integration Services, IT Support Services, Life Cycle Asset Management, and Hardware & Software Distribution for the identified Custom Solution offerings as a means of significantly growing revenues yet maintain focus on its core mission as a value-add consulting and solutions integration firm.

C2i Solutions will work extensively with its strategic security partners; and will execute plans to develop specialty software modules that can be integrated with specific Server and Mobile Communications technology to serve the requirements for specific customers across the government and public sector markets. C2i Solutions, as a boutique government focused integrator, plans to solidify a strong business relationship with its OEM partners (hardware, software, and services) to provide C2i Solutions customers with the value-added technology that will build intellectual capital in the minds of its customer base as a viable and invaluable company to turn to for mission-critical integrated and custom solutions.

Earnest Williams, CEO of C2i Solutions, has over thirty years of increasingly responsible sales, marketing, business development and management expertise in the Information Technology, Complex-Systems, Software, Network Communications, and Information Security markets. Earnest brings senior executive level wisdom and decision making skills with his entrepreneurial approach to risk-taking coupled with his pragmatic approach to building long-term clients relationships, and market driven value for his clients. Earnest has accumulated several significant accomplishments throughout his career, working with leading technology companies IBM, DEC, Newbridge Networks, and Fujitsu Storage Software.

Earnest served honorably as a US Army Officer from 1969 to 1972, commissioned at Fort Benning, GA., and attended the US Armor School at Fort Knox, Kentucky. He graduated with honors from Alabama A&M University with a BS in Business and Economics; and successfully completed the University of Michigan School of Business Executive Program.

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Our federal government customers face the daunting task of insuring their currently installed base of IT assets too often represent a constraint to achieve transformation goals, second only to changing organizational culture. Informational-age operational concepts such as "net-centric" operations, "responsive logistics-readiness" systems will fuel the demand for value-focused IT Infrastructure, and Security and Systems Integration firms that offer a value-proposition that enables strategic change in IT asset utilization, modernization, and transformation.

C2i's competition is a combination of IT resellers, and other small businesses providing technology integration professional services. Their place in the market cannot be dismissed, as many agencies and acquisition initiatives will be directed toward the utilization of small businesses to achieve their diversity and set-aside procurement objectives. **C2i's strength**, as a veteran-owned small business, is enhanced with our "**Value-base approach**" in working with our targeted clients, and our approach to the market.



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C2i seeks to establish strong relationships with OEMs (HP / IBM /Microsoft / Secure Computing), Large Systems Integrators (Unisys, General Dynamics, GovConnection, Merlin International and Booz Allen) critical to funded programs, customer access, acquisition vehicles, and sales.

### **DHS First Source – Solicitation Number HSHQDC05R00001**

The Department of Homeland Security in February 2007 awarded a \$3 Billion IT procurement opportunity (IDIQ). Because this is a small business set aside component, Net Direct Systems (NDS spin-off parent) and C2i Solutions formed a joint-venture and will jointly manage the contract award during a Phase 1 Program Office start-up, which will subsequently novate to C2i for Phase 2 (post award). It is our intention to broadly market C2i Solutions TMCC (Tactical Mobile Communications Center and EMCC (Emergency Mobile Communications Center) systems and solutions within this opportunity.

### **Legacy Systems Capabilities and Expertise**

C2i Solutions possess the requisite capabilities, expertise, past performance and business development support to provide sales, account management, consulting, project and program management for the migration, and transition management of VAX – Alpha – OpenVMS based systems

<b>Project Examples:</b>
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#### ***Legacy Application and Systems Modernization Initiative – US Air Force – Electronic Systems Center***

Received Business development funding support from Hewlett-Packard for Legacy Application Migration and Systems Modernization initiative:

#### **LAMP REMIS Code Analysis and Modernization Project**

Initial Project work completed...unsolicited proposal presented to the USAF AFMC 554<sup>th</sup> Electronic Systems Wing MAFB-Gunter Annex, AL on 12/14/06 with follow-on meeting/proposal review 01/12/07. The proposal was presented, as follows:

Total application migration professional services (requirements refinement, design, develop, code, test, document, install, etc.)

IT infrastructure transformation/migration – Systems Platform

On-going annual support costs (maintenance/staff support, sustainment)

### **EMCC – TMCC Joint C2i HP Business Development Plans**

The ***C2i Mobile Command Center (EMCC - TMCC)*** is a suite of systems, highly stable and reliable, due to its lack of dependency on any single communication media infrastructure; it supports the Public Internet, WAN, 802.11b, VPN, Cellular, Satellite, and Radios. The ***EMCC- TMCC*** also enables users to access streaming live video and mobile surveillance connections.

Originally developed and deployed by former members of the US Military and Engineers from NDS, ***now working for C2i Solutions***, for use by the US Army, responding to the critical tactical requirements of the military, the 'Custom Solutions' team, in collaboration with Hewlett Packard (HP), developed a next generation Tactical Communications Server (TCS) solution. These servers satisfied the deployable network requirements of all military branches.



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## **Combat-Proven Tactical Solution – Development and Evolution of the TMCC**

The enhanced **Tactical Mobile Command Center™ (TMCC)** was designed to fulfill the military's Unit of Action (UA) and Brigade Combat Team (BCT) tactical network requirements.

The **TMCC** has already performed a critical function in the Global War on Terrorism (GWOT). It is a combat-driven solution supporting Net Centric Warfare in Southwest Asia (SWA) since the 9-11 attacks. The **TMCC** delivered to the military video, data, and digital voice communications as they advanced on the modern battlefield in Afghanistan. After its enormous success, the **TMCC** solution deployed to a new theater of operation, performing a major role during the course to free Iraq. After a one-year tour in theater, the **TMCC** provided outstanding operating capabilities with a ninety-three percent operational readiness rate. Other vendor's solutions delivered twenty-three percent operational readiness rates.

The purpose of this plan is to manage the Evolutional, Operational, and Business aspects of the **TMCC - EMCC** and associated peripherals to ensure a profitable contribution to both C2I and HP market-based growth strategy and corporate earnings.

C2i Solutions has a strong past performance with the original Tactical Communications Suite (TCS) which is now the enhanced **TMCC** selling the previous incarnation to Ft. Campbell, Afghanistan, Iraq and Shaw AFB. We feel that the new center will be an even more lucrative venture. With many of our C2i team members having Military backgrounds and contacts, we are familiar with the policies and needs of all branches of the US Military. We have access to G6 within the Military and knowledge of the testing, assessment and certification processes at JITC. We have extensive solutions expertise within C2i for design, development and implementation.

With the commitment, channels, marketing backing and financial support of Hewlett Packard (HP), key communications software partners, and two distribution and integration partners, C2i effectively acquired the components and provided the systems engineering expertise to build **one demo and one pilot TMCC Suite** that will enable the "**Tactical IT Initiative**" to go forward with the demonstration of the integrated solution offering.

This joint-development process opens many additional doors and access to DoD-wide **Tactical IT and Deployable Communications Programs**.

Initial Configuration for the TMCC demonstration unit:

- 4 Blade Chassis C3000
- MSA with 6 300Gb Drives
- Communication Suite for VOIP, Media Server, Wireless
- Wave Technology from Cisco for ROIP
- Rapid Deployment Server



**What is the contribution of each Partner to the Success of the Plan:**

**C2i Solutions:**

- Past performance (TCS original is now enhanced to TMCC for Tactical IT and DR-COOP Facilities and EMCC for Emergency Response – Law Enforcement – and DR COOP Facilities)
- Fort Campbell; Afghanistan; Iraq; Shaw AFB (Past Deployments)
- Secure and Non-secure networks
- Secure Video-Conferencing (augmented with enhanced Compression Technology)
- Network Communications and Security Design, Development, and Implementation
- Built-in Security Firewall (within Tactical – Rugged Enclosure)
- JITC Knowledge of testing, assessment, and certification
- Solutions Expertise (Communications Interoperability)
- Team members with Military Backgrounds
- Dedicated Solutions focus – Custom Integrated Solutions
- Access to G6 within the Military
- Support of Distribution Partners for “Integrated Solutions Selling” and “Solution Integration Value Added Facilities, Logistics, Services, and Support)

**Hewlett Packard (HP)**

- IT Infrastructure Solutions (Superior Hardware Technology)
- Systems Management Software Tools
- Worldwide Call Center Support
- Market Development Funding Support (Eclipse-Omni Programs)
- Capability to provide augmented support for POCs
- Dedicated Solutions focus – Strategic Programs for Tactical IT Solutions
- Account Access as a Fortune 100 Organization
- Commitment within HP DoD Federal Group to lead effort



## C2i Mobile Communication Center

### EMCC -TMCC

- Redundancy
  - Dual Switches
  - Dual UPS
- Communication Applications
  - VOIP & ROIP
  - WAVE
  - High Speed Streaming Video
  - Live Communications and Alert Notifications Across Multiple Agencies, Entities & Devices
  - Pre- Defined Scenarios, Ad- Hoc, & System Automated Alert Notifications
- Support
  - Remote Management



### Microsoft Server Applications in the Communications Suite

- Windows Server 2003 (+ Above)
  - Active Directory
    - Organizing users / groups / computers / servers / domains / forests / policies
- Clustering
  - Ensure available for 5 9's
- Exchange Server 2003 (+ Above)
  - Forest / Domain integration for corporate email
  - Used as Public Folders
  - Used for Outlook Web Access
  - Configure as FEP for securing mailboxes on a backend exchange server
  - Configure POP3 access for public email access
- DNS
- Certificate Authority Server (CA)
  - Needed for Office Communications Server 2007
  - Needed for Outlook Web Access (over SSL)
  - Needed for Office Communicator 2007
  - Needed for Communicator Web Access
- SharePoint Services 3.0
  - Internal collaboration and central document repository



- MOSS 2007  
Same as above
- SQL Server 2005 (+ Above)
  - Backend DBMS for WSS 3.0 / MOSS 2007 / Office Communications Server 2007 / Live Meeting / SQL Reporting Services and other intranet / internet applications
- SQL Reporting Services 2005 (+ Above)
- Internet Information Server 7.0 (+ Above)
  - Needed for Outlook Web Access
  - Needed for Communicator Web Access
  - Needed for CA Web Requests
  - Needed for SharePoint Services (WSS 3.0 / MOSS 2007)
  - Needed for SQL Reporting Services
  - Needed for Intranet / Internet websites and portals
- Terminal Server
  - A central server to host multi-user applications. Allows consumers to run remote applications from their desktops, where the processing is actually performed on the server itself.
- Live Meeting 2007
  - As part of Office Communications Server 2007, the ability to use LM 2007 enhances the collaboration of teams giving the ability to remotely share desktops and presentations without the need for traveling, thus saving incurring a cost saving.
- Groove Server 2007
  - Another tool used in team and company collaboration



## **I. Infrastructure Practice**

### **Overview**

IT managers today face significant challenges as they strive to meet a growing list of service level requirements with shrinking IT budgets. Core IT Infrastructure service requirements cross industry verticals. Most IT organizations are required to provide 24 X 7 web-based mission critical transaction systems to both their internal and external clients. IT executives are pursuing Server and Storage consolidation projects as a method to regain control of their server and storage environment in order to contain the server and storage proliferation and to obtain real ROI from the consolidation project. IT business continuance requirements keep many IT executives awake at night wondering when and if data availability can be maintained. Solid, bulletproof IT Infrastructure components are critical to the success of the organization.

Infrastructure Library (ITIL) based Performance Management. C2i Infrastructure services professionals will provide:

- Complete and comprehensive IT Infrastructure assessments for areas such as business continuity, consolidations, backup/recovery and archiving strategies, and SANs that include business case TCO and ROI together with the executive required for management approval.
- Project managers and IT consultants that are well versed in Infrastructure methodology and who incorporate best process practices based on ITIL and our own implementation experiences.
- Complete turnkey proof of concept testing, implementation and deployment of your Infrastructure solutions.
- Extensive and detailed documentation, knowledge transfer and post implementation follow-up.

### **Backup and Recovery Solutions**

#### **Overview**

Business today is faced with ever-increasing data protection requirements for the vast amount of accessible information storage required by the organization. The need to reliably backup and restore data has reached critical levels of importance. Saving, restoring and archiving business critical data is a daily imperative. There is a broad choice of data protection alternatives to eliminate back windows; from on line to open file backups, from on line incremental backups to clustered backups, from server less backups, to zero downtime and zero impact backups.

A key business imperative is to make critical data assessable around the clock which means utilizing a backup recovery solution that is reliable, centrally managed, integrated and automated. The backup recovery solution must provide maximum data protection and performance from the existing IT infrastructure and scale to the infrastructure IT requires in the future.

C2i will provide solution experts in Storage Management to define, design and deploy your backup solution giving you an enterprise solution tailored to your business requirements.

#### **Qualifying Questions**

1. Are you confident that your data restore process will work correctly?
2. Do you have multiple backup systems in place today?



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3. Has a backup recovery project ever been undertaken?

### Features

- Scalable backup solution with centralized management and control and a flexible architecture to meet the growing needs of data centers.
- Platform independence that protects data residing on virtually any platform including Unix, Windows, Linux and Netware.
- Centralized policy-based administration with a central console. Allow your backup administrators to effectively manage a large number of servers. Combined with the automated enterprise backup operation, thousands of servers and storage devices can be consolidated for effective, efficient administrative management.
- Remote administration and verification of the backup processes allows your administrators to work from anywhere including dial up facilities.
- C2i turnkey definition, design, and deployment of your enterprise backup system.
- Operation testing and proof of concept of all aspects of the backup recovery solution.
- Systems acceptance testing of the backup recovery deployment.
- Complete set of documentation and knowledge transfer.

### Benefits

Key benefits for a backup recovery project include:

- Simplifies and automates the management of backup recovery across the enterprise.
- Centrally manages and verifies that data protection in the form of backup and recovery is successfully taking place across the enterprise.
- Minimizes backup windows and combines backup processes with zero down time technologies to optimize uptime and availability.
- Delivers a complete set of updated backup policies, procedures and processes that provide confidence and assurance that backup and recovery meets business requirement and industry best practices.
- Provides a complete set of documentation including design architecture, operational documentation and operational run books.

### Methodology

Our backup recovery methodology is built on a phased approach using C2I standard methodologies of assess, define, design, deploy and manage. C2I project managers and technology consultants are experienced and well versed in backup and recovery best practice processes based on the IT Infrastructure Library (ITIL) and our experiences implementing backup recovery projects.

### Deliverables

- Assessment documentation that defines the backup recovery strategy, hardware definition and validation of LAN/SAN connectivity.
- Implementation of the backup recovery solution
- Application integration with the backup recovery solution
- Testing, validation and production of the backup recovery implementation
- Provide documentation and knowledge transfer.

## SAN and NAS Design and Implementation

### Overview



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Storage Area Networks (SANs) and Network Attached Storage (NAS) are increasingly replacing or supplementing traditional server-attached storage implementations. As a result, enterprises that implement SAN and NAS storage are realizing a wide range of benefits, including increased flexibility, easier storage deployment, reduced storage cost, increased storage utilization and overall better storage management.

SANs are network infrastructures designed to provide a flexible, high performance, highly scalable and easily accessed storage environment. SANs enable many direct connections between servers, storage devices and tape libraries. High performance Fiber Channel switches and Fiber Channel network protocols ensure that storage, tape and server device connections are reliable, efficient, effective and manageable.

NAS solutions are configured as file-serving appliances accessed by workstations and servers through a network protocol such as TCP/IP and applications such as NFS. Most NAS connections will reside between workstation clients and the NAS file sharing facility. NAS connections rely on the underlying corporate network infrastructure to function effectively. NAS solutions allow an enterprise to quickly add file storage capacity to their infrastructure.

### **Qualifying Questions**

1. Are any storage devices at the end of the technology life cycle?
2. Has storage availability and utilization become an issue?
3. Does the storage inventory contain older storage devices?

### **Features**

- Experienced C2i Solutions (C2I ) team of storage networking consulting engineers.
- Best practice methodology using IT Infrastructure Library (ITIL) based standards and C2I custom methodology
- SAN design and architecture that optimizes data transfer between servers
- NAS design and architecture that considers network performance issues.
- NAS configuration and deployment of the NAS appliances to insure appropriate levels of file security are provided.
- Business case: TCO and ROI and budget as appropriate.
- Migration and project plan including resource requirements, dependencies and transition planning to the SAN and NAS environment
- Systems acceptance

### **Benefits**

Key benefits for a SAN project include:

- ROI ranging from 15% to 40%
- TCO significantly reduced.
  - Streamlined systems and storage management
  - Floor space savings
  - Environmental savings
  - Reduced software licensing cost
  - Increased storage utilization
- Manageability and control by reducing the number of storage devices and implementing architectural standards, policies and procedures
- Potential LAN free backup and recovery
- Potential live server less backup and recovery
- Saves backup time, LAN time and server time



## Methodology

Our Storage Area Network methodology is built on a phased approach using C2i standard methodologies to assess, define, design, deploy and manage. C2i project managers and technology consultants are experienced and well versed in Storage Area Network best practice processes based on the IT ITIL and our experiences implementing consolidation projects.

## Deliverables

- SAN/NAS planning and definition documentation
- Architectural design specifications documents
- Project management parameters defined
- SAN/NAS deployment
- Documentation and knowledge transfer including Visio diagrams of the existing and new environment.

## Server Consolidation

### Overview

The proliferation of ERP applications, Data Warehousing, mobile computing, CRM, and Supply Chain Management continue to grow in complexity and strategic importance. As a result computing systems are proliferating at an exponential pace creating server Sprawl across the enterprise.

By consolidating the number of servers in the environment, addressing enterprise storage requirements and building an efficient consolidated systems environment this drastically reduces the TCO of the IT infrastructure.

Server consolidation is an enabling technology that goes beyond just the server hardware. Server consolidation includes the IT infrastructure elements (application servers, database servers, print and file servers, Web servers, data warehousing servers), applications (operating systems, enterprise applications, software management tools) and systems management policies and procedures.

### Qualifying Questions

1. Are any servers at the end of the technology life cycle?
2. Does the server inventory contain old servers and/or multiple operating systems?
3. Are there servers being underutilized?

### Features

- Consolidation executive summary – high-level overview with respect to all aspects; consolidation, hardware platforms, storage solutions, applications, infrastructure software and networks.
- Experienced team of IT consolidation specialists.
- Best practice methodology using IT Infrastructure Library (ITIL) based standards and C2i Solutions (C2i) custom methodology.
- Clear definition of consolidation scope, goals, business objectives and IT objectives by interviewing key stakeholders.
- Inventory review of existing hardware and software subject to consolidation.



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- Strategy review of existing processes impacted by consolidation (i.e. Systems management, business continuance, backup/recovery, disaster planning).
- Business case - TCO, ROI and budget.
- Applications assessment to determine which can coexist in the new environment.
- Technology recommendations: new infrastructure architectural design, technology strategies (systems management, business continuance, backup/recovery, disaster planning).
- Migration and project plan including resource requirements, dependencies, transition planning.
- Deployment proof of concepts and testing.
- Deployment new production environments.
- Systems acceptance.
- Documentation and knowledge transfer.

## Benefits

Key benefits for a Server Consolidation project include:

- ROI ranging from 15% to 75%
- TCO significantly reduced.
  - Streamlined systems management
  - Floor space savings
  - Environmental savings
  - Reduced software licensing cost
  - Increased server utilization
- Improved manageability and control by reducing the number of hardware and software platforms and implementing architectural standards, policies and procedures.

## Methodology

Our server consolidation methodology is using on a phased approach incorporating C2i standard methodologies - assess, define, design, deploy and manage. C2i Project Managers and technology consultants are experienced and well versed in consolidation best practice processes based on the ITIL and our experiences implementing consolidation projects.

## Deliverables

- Technical assessment – executive overview and detailed documentation of your current environment with consolidation recommendations
- Financial assessment - executive document defining the ROI and TCO of the consolidation recommendations.
- Architectural design - configuration and detailed design of the server consolidation is defined.
- Implementation – C2i implements and validates the consolidation solution.
- Documentation – detailed documentation package and provides knowledge transfer to your engineers.

## Storage Area Management Solutions

### Overview

The business environment is changing daily, and enterprise storage is doubling every 12 to 24 months to meet these requirements. At the same time, IT service management is faced with shrinking budgets and reduced head count.



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To meet storage requirements, enterprises have consolidated storage, implementing storage area networks and network attached storage, as well as adding additional direct attached storage. Managing these heterogeneous storage devices, is a very time consuming manual effort, requiring individual attention to each storage device. Effective storage management is difficult and the advantages of storage consolidations as well as the implementations of SAN and NAS storage are negatively impacted.

### **Qualifying Questions**

1. Is the cost of storage a significant budget item?
2. Do you know your storage inventory and utilization?
3. Do you use a charge back systems for IT operations or ROI of IT projects?

### **Benefits**

Key benefits for a Storage Area Manager project include:

- Simplify and automate the management of multi-vendor across disk, tape direct attached and network attached storage.
- Centrally manage and monitor availability, performance, usage, growth and cost across an enterprise.
- Optimize storage resource utilization and IT operations.
- Set, manage and measure storage I/Os.
- Seamlessly integrate storage management with IT enterprise management.
- Reduce TCO of storage and storage management.

### **Methodology**

Our Storage Area Manager methodology is built on phased approach using C2i standard methodologies of assessment, definition, design, deployment and management. C2i project managers and technology consultants are experienced and well versed in storage management best practice processes based on the IT Infrastructure Library (ITIL) and our experiences implementing storage projects.

### **Deliverables**

- SAM planning and definition documentation
- Architectural design of the SAM solution
- Project management deployment parameters defined
- SAM solution implemented
- Complete set of documentation prepared and knowledge transfer completed.

## **Storage Consolidation**

### **Overview**

The proliferation of ERP applications, Data Warehousing, mobile computing, CRM, and Supply Chain Management continue to grow in complexity and strategic importance. As a result computing systems are proliferating at an exponential pace creating storage Sprawl across the enterprise.



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By consolidation storage in the environment, addressing enterprise server requirements and building an efficient consolidated systems environment, TCO of the IT infrastructure is drastically reduced.

Storage consolidation is a systematic redesign and redeployment of mass storage on an enterprise level. It focuses on separating storage management from compute management and acts to reduce the complexity of the storage infrastructure, thereby making storage more reliable, available, easier to manage and less costly to operate.

### **Qualifying Questions**

1. Has storage availability and utilization become an issue?
2. Is storage hardware maintenance cost increasing?
3. Does the storage inventory contain older storage devices?

### **Features**

- Consolidation executive summary – high level overview with respect to all aspects of consolidation, hardware platforms, storage solutions, applications, infrastructure software and networks.
- Experienced team of IT consolidation specialists
- Best practice methodology using IT Infrastructure Library (ITIL) based standards and C2i custom methodology
- Clear definition of consolidation scope, goals, business objectives and IT objectives by interviewing key stakeholders.
- Inventory review of existing hardware and software subject to consolidation.
- Strategy review of existing processes impacted by consolidation (i.e. Data Base Management, systems management, business continuance, backup/recovery, disaster planning).
- Business case: TCO and ROI and budget.
- Applications assessment to determine which can coexist in the new environment.
- Technology recommendations: new infrastructure architectural design, technology strategies (systems management, business continuance, backup/recovery, disaster planning).
- Migration and project plan including resource requirements, dependencies, transition planning.
- Deployment proof of concepts and testing.
- Deployment new production environments.
- Systems acceptance.
- Documentation and knowledge transfer.

### **Benefits**

Key benefits for a Storage Consolidation project include:

- ROI ranging from 15% to 40%
- TCO significantly reduced.
  - Streamlined systems and storage management
  - Floor space savings
  - Environmental savings
  - Reduced software licensing cost
  - Increased storage utilization
- Improved manageability and control by reducing the number of storage devices and implementing architectural standards, policies and procedures results in less storage administrators.



## Methodology

Our storage consolidation methodology is built on a phased approach using C2i standard methodologies to assess, define, design, deploy and manage. C2i Project managers and technology consultants are experienced and well versed in consolidation best practice processes based on the ITIL and our experiences implementing consolidation projects.

## Deliverables

- Technical assessment – executive presentation and detailed documentation of your current environment with consolidation recommendations.
- Financial assessment – executive document with the ROI and TCO defined for the storage consolidation.
- Architectural design – configuration and detailed design recommendations are defined.
- Implementation – C2i implements and validates the storage consolidation solution.
- Documentation – detailed documentation package and provides knowledge transfer to your engineers.

## Systems Implementation and Integration Solutions

### Overview

C2i provides best-in-class, focused solution sets that implement and integrate IT and communications interoperability professional consulting services. C2i integrates legacy IT systems products and services into our “Server-Blade” centric services offerings. C2i provides high level, superior project management on each and every implementation and integration engagement resulting in superior client satisfaction.

C2i will help you define, design and deploy a successful mission-critical computing solution for complex-multi vendor environments. C2i will define your requirements including expandability/scalability, reliability, performance, availability, serviceability, compatibility with current environment, cost/benefit analysis or alternative solutions, capacity planning, technology evaluations and propose optimal solutions.

The expert C2i team first performs the technology evaluation to define your performance, scalability, RAS, capacity, integration and COO requirements. The optimal product and deployment solution is designed, managed and deployed flawlessly. Mission-defined deployments are seamlessly and flawlessly

designed, planned, integrated and implemented in your environment. C2i delivers project management, planning and architecture design, proof of concept testing, seamless integration, deployment and complete documentation and knowledge transfer.

C2i turns our expertise into your success. Our **industry knowledge** provides vendor independent solution evaluation and selection. Our **seasoned team** reduces deployment risks. Our **experience** ensures faster solution deployment. Our **capabilities** allow you time to focus on your core business.

### Qualifying Questions

1. Are continuous or highly available systems strategic to your organization?
2. Is it a challenge to flawlessly integrate and deploy continuous or highly available systems in your environment?



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3. Do your systems provide the maximum performance and expandability you require?

## Features

- Technology evaluations – providing a review of industry solutions, market assessments and directions
- Technology presentations – review of existing technologies and technology recommendations and alternatives
- Business and technology survey
- Environmental and integration impact review
- New system impact analysis
- Cost and ROI impact analysis
- Performance requirements evaluation based on throughput, systems and applications uptime metrics
- Solutions recommendations reporting to incorporate the complete requirements analysis finding, technology survey, cost and ROI recommendations and the optimal solutions recommendation
- Continuous and highly available solutions may include best-of-breed multi-vendor hardware and software products and the C2i project deployment team for implementation
- Experienced team of C2i implementation and integration solution experts
- Flawless and seamless deployment and integration by the C2i team of implementation specialists
- Complete set of documentation and knowledge transfer

## Benefits

Key benefits for a system implementation and integration solution include:

- Optimal technology and business solutions defined and deployed
- ROI and cost impact analysis defined in detail and summarized for executive presentations
- Flawless and seamless deployment and integration of new systems and systems components

## Methodology

Our system implementation and integration methodology is built on a phased approach using C2i standard methodologies to assess, define, design, deploy and manage. C2i project managers and technology consultants are experienced and well versed in backup and recovery best practice processes based on the IT Infrastructure Library (ITIL) and our experiences implementing backup recovery projects.

## Deliverables

- Technology assessment – executive presentation and detailed documentation of existing environment with optimal technology solution recommendations
- Financial assessment – executive summary of the TCO and ROI of the implementation and integration solutions
- Architectural design and configuration documentation of the recommended solution sets
- Project management and deployment of the solution
- Detailed documentation and knowledge transfer to your systems engineers

## Microsoft Professional Services Practice – Assessment - Design – Install- Implementation

## Microsoft Active Directory Design Services



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## Overview

In today's computing environment there are only a handful of Directory Services providers. In the market today Microsoft's Active Directory plays as a leader in this space for many companies. The proper design and implementation of the product can increase productivity, decrease administration while enhance the end user experience and cut IT costs. The architecture of a proper system is crucial to the longevity and scalability of the enterprise and without a proper design to follow mistakes may take place that will hamper the implementation.

The successful implementation of Active Directory starts with a solid foundation. The foundation consists of a thorough understanding of the company structure, locations, network infrastructure and associated components. With C2i consultants providing the services, you can count on: an optimized design.

## Service Description

- Review of current environment: The C2i consultant works with your system administrators, network staff, key staff managers and users to evaluate the current environment, redundancy and disaster recovery requirements
- Create a requirements definition that matches the environment discovered in step one: This acts as a road map for the design process
- Architect and design an Active Directory system to meet the requirements definition: Forest and tree, DNS, WINS, LDAP, FSMO placement based on best practices
- Document the design: Documentation of the planned design including hardware, software, machine placement, network additions, Forest and tree structure, dependencies, third party software options and external components
- Documentation review: Review documentation with staff to ensure completeness
- Update existing documentation based on implementation outcome: Changes in the design come about in most implementations due to the complexity of most organizations
- Design delivery: This process provides your establishment with all the information required to understand and maintain the new design

This is a basic design service consisting of not more than one forest/domain structure. It does not address any migration or inter-org communications. As part of the service delivery, the customer is required to have a dedicated resource assigned to work with the C2i technical specialist. For variations of this service, contact C2i Professional Services.

## *Microsoft Active Directory Implementation Services*

### Overview

In today's computing environment there are only a handful of Directory Services providers. In the market today Microsoft's Active Directory plays as a leader in this space for many companies. The proper design and implementation of the product can increase productivity, decrease administration while enhance the end user experience and cut IT costs. The architecture of a proper system is crucial to the longevity and scalability of the enterprise and without a proper design to follow mistakes may take place that will hamper the implementation.



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The successful implementation of Active Directory starts with a solid foundation. The foundation consists of a thorough understanding of the company structure, locations, network infrastructure and associated components. With C2i consultants providing the services, you can count on: an optimized design, decreased implementation time, effective management and increased system dependability.

### **Prerequisite: Active Directory Design Services engagement**

#### **Service Description**

- Work with you with equipment procurement: As outlined in the design document
- Implement an Active Directory environment: Setup and install hardware as required, install and configure operating systems to set standards, implement Active directory services and associated components as defined in the design
- Update existing documentation based on implementation outcome: Changes in the design come about in most implementations due to the complexity of most organizations
- Documentation review: Review documentation with staff to ensure completeness
- Client rollout: Client rollout and desktop configuration is provided for only one machine and is available as a separate service
- Documentation and knowledge transfer: This process provides your establishment with all the information required to understand and maintain the new environment.

This is a basic implementation service consisting of not more than one forest /domain in a pristine environment. It does not address any migration, inter-org communications or hardware or software products. As part of the service delivery, the customer is required to have a dedicated resource assigned to work with the C2i technical specialist. For variations of this service, contact C2i Professional Services.

### ***Microsoft Exchange Implementation Service***

#### **Overview**

In today's computing environment email is at the core of most IT budgets. The proper design and implementation of the product can increase productivity, decrease administration while enhance the end user experience and cut IT costs. The architecture of a proper system is crucial to the longevity and scalability of the enterprise and without a proper design to follow mistakes may take place that will hamper the implementation.

The successful implementation of Exchange starts with a solid Active Directory foundation. The foundation consists of a thorough understanding of the company structure, locations, network infrastructure and associated components. With C2i consultants providing the services, you can count on: an optimized design, decreased implementation time, effective management and increased system dependability.

### **Prerequisite: Active Directory Design Services engagement**

#### **Service Description**

- Review of customer environment: Active Directory review and architecture understanding
- Requirements definition: Outline the scope of work and provide initial pricing for implementation
- Design and Exchange implementation: Based on requirements definition
- Hardware installation: Install and configure hardware
- OS installation and configuration: Install operating system and configure to existing environment
- Exchange server software installation: Install Exchange on a single server and configure to design specifications



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- Update existing documentation based on implementation outcome: Changes in the design come about in most implementations due to the complexity of most organizations
- Documentation review: Review documentation with staff to ensure completeness
- Client rollout: Client rollout and desktop configuration is provided for only one machine and is available as a separate service
- Documentation and knowledge transfer: This process provides your establishment with all the information required to understand and maintain the new environment.

This is a basic implementation service consisting of not more than one forest /domain and a single Exchange server in a pristine environment. It does not include any hardware components or software licenses. It does not address multi domain, masquerading, Bridgehead and or any migration or inter-org communications. As part of the service delivery, the customer is required to have a dedicated resource assigned to work with the C2i technical specialist.

## **II. Managed Services – Data Base Management**

### **Overview**

The need for effective database support has become more critical as enterprises continue to add storage business and expand e-commerce databases to handle many transactions at high speeds. Many IT departments are faced with the task of either upgrading their current database to a supported level or to adding new database functionality.

Typically, the IT department's database administrator (DBA) team is being pulled in many directions and unable to effectively support the database changes required by the organization. Whether a database upgrade is required or just effective DBA support, IT organizations are increasingly turning to managed services to supplement their DBA staff.

C2i Database Managed Services was designed to provide database expertise and support to help organizations meet IT staffing and budget challenges. By combining its team of certified DBAs with BMC Software's premier PATROL tools, C2i will monitor, tune and manage the production database environment.

C2i delivers 24 x 7 remote database administration (DBA) services and performs all the functions of a full time DBA – monitoring, maintenance, performance tuning, backup, recovery, restoration, and more. These services are built on processes comprised of proven operational procedures, a large team of

senior DBAs and BMC Software PATROL technology. Supported databases are Oracle, Sybase, Informix, DB2 UDB, and MS SQL Server.

**C2i Database Managed Services are powered by dbaDIRECT.**

### **Qualifying Questions**

1. Is database support strategic to your organization?
2. How do you staff and manage your DBA requirements?
3. Are your databases performing effectively to support your response time, availability and accessibility required services levels?

### **Features**



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- Space management – ensuring the amount of disk space required is available.
- Backup/Recovery verification – checking that backups have been performed and that they are viable input into the recovery procedure.
- Database fragmentation – monitoring internal database space for fragmentation that can lead to excessive page chaining resulting in poor performance, and scheduling of database reorganizations to correct excessive fragmentation.
- Database monitoring – recording resource shortages in the area of CPU and memory and making recommendations on the need to acquire additional capacity.
- Database warning – checking log files for warnings and errors reported by the database management system.
- Statistical updates – determine the timing of updating internal database statistics to improve optimizer performance.
- Database integrity checks – periodic execution of utilities to verify structural database schema integrity and take corrective action as required.
- Trend analysis - provides reports regarding performance, resource load factors for proactive environmental management.
- Database release upgrades – an optional service available for an annual release upgrade.

## Benefits

Key benefits include:

- Ensures 24 x 7 availability and optimum performance of business critical database servers.
- Experienced DBAs available on an as needed basis – from a brief conversation to an entire implementation.
- Reduces cost of your ongoing database support.
- Eliminates the cost of recruiting, training, and retaining full-time DBAs and contractors.
- Enables your applications support professionals to focus exclusively on application issues while C2i supports the underlying database environment.
- Assigns cost of DBA task to a specific project to track project budgetary cost.
- Manages databases *proactively* versus reactively.
- On line access to database performance reports and to technical support via client portal.
- Justifies SLA compliance and return on investment with on line SLM.
- Supplements existing DBA staff and solve off-hour problems.

## Methodology

Our Managed Services methodology combines process, people, and technology to flawlessly implement and operate the managed services environment. Our process has been continuously refined to eliminate start up and cutover issues, and to proactively manage your databases in the most professional manor.

The process begins by utilizing best in class processes to implement security, connectivity, and agent installation, followed by full support. The continuous management of your databases follows proven processes for reporting, performance analysis and operations. Full support incorporates standardized, continuous, managed processes.

## Deliverables

- Requirements documented and defined
- BMC Patrol agents installed.
- Remote connectivity implemented



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- Remote Database management processes defined and documented
- Remote Database management implemented via C2i dba
- Database management reporting available via Web and WebEx sessions.

### **III. Network Practice**

#### **Overview**

C2i provides a full range of network centric technical services. C2i integrates CISCO, HP, and a host of other products and services into our Network Services offerings. C2i Network services are integrated with our comprehensive security and infrastructure offerings to complement and enhance each service practice area. C2i provides superior project management on each and every network service engagement resulting in superior client satisfaction.

#### **The portfolio of C2i Network Services includes:**

- Project Management
- Network Architecture and Design
- Network Assessment
- Capacity and Performance Analysis
- Network Management Solutions
- Implementation and Integration Services
- Disaster Recovery
- Documentation and Training Services

#### **Project Management**

C2i delivers full life cycle Project Management for C2i turnkey implementation and deployments and for very complex multi-vendor, multi location and multi-agencies projects. C2i provides the leadership, the service delivery methodology, the project management methodology, and the experience required for repeatable project success. C2i project managers deliver project governance documents, scope management, budget and schedule management, project financial management, quality management,

human resource management, communications management, and risk management. C2i project managers coordinate the complete project life cycle and assure project success by beginning project management activities during the project proposal and initiation phase.

#### **Network Architecture and Design Services**

C2i provides network architecture and design services for data, voice, and signaling networks. C2i has a number of on staff engineers that are industry leaders, vendor certified, and hold patents in the network and telecom industry.

#### **Network Assessment**

C2i provides our clients with a network assessment. This important service can be used as a baseline to document and understand the stability and performance benchmarking of a clients existing network. C2i



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provides Network Assessment services to any client network including data or voice signaling. As today's economy has led to work force reductions, network changes and growth must continue to meet company/corporate objectives. Agencies and organizations are finding that their networks are no longer crisply managed, documented, or understood. Their dedicated network engineering talent may no longer be on staff, may have been given more responsibility and no longer has the attention span to keep up with documentation and network analysis.

C2i has the resources, tools, and methodology to baseline the clients network from a performance and capacity perspective, robustness, and a physical connection audit. This very useful information can provide the IT and network management staff the confidence in continuing to overlay applications and connecting additional facility and systems to their existing network.

A by-product to this assessment is the unique ability for C2i to provide recommendations and solutions to the client to correct any problems or shortcomings noted in the network audit. These solutions can be derived as discussed in more detail in the *Network Architecture and Design* section of this document.

### **Capacity and Performance Analysis Services**

Upon completion of a network assessment, C2i can provide a snapshot of the health of the data or voice network. This snapshot is based on the initial analysis and benchmarking of a network. Once we have collected baseline information that might provide important capacity and performance benchmarks of a client's network, C2i can demonstrate and quantify the client's benefit in understanding their network performance. As the clients network evolves, different departments, networks converge, applications and systems start to share the corporate wide area network and LAN facilities. If the client is not proactively monitoring their network utilization, data delivery and user issues may become a daily operational hindrance. This may cost the client time and money related to down time, slow network access and application performance, and costly network trouble shooting cycles.

C2i has the skills and experience to recommend network performance tools, customize tools and provide data to collection engines. This will help augment your network operations and engineering efforts with our knowledge of life cycle network performance applications.

C2i can provide the client the visibility into their network to determine the capacity of their network links, performance of the network routers and elements, and utilization of their LAN segments. Using any number of off-the-shelf tools or customized collection tools, C2i can provide the client the opportunity to

save money on circuit bandwidth management and network availability to ensure access to mission critical applications and corporate systems.

### **Network Implementation and Integration Service**

C2i delivers turnkey implementation, integration and engineering services to support our complete suite of Network service offerings. The expert C2i team will first perform a network evaluation to define the client's performance, scalability, robustness, and capacity benchmarks. The optimal network and deployment solution is designed, project managed and deployed flawlessly. Nonstop deployments are seamlessly and flawlessly designed, planned, integrated and implemented in your environment. C2i delivers project management, planning and architecture design, proof of concept testing, seamless integration into a production environment, complete documentation and knowledge transfer.



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## **Network Disaster Recovery and Backup Services**

C2i has a refined portfolio of disaster recovery and business continuity solutions. Our attention to engineering network redundancy solutions along with infrastructure hardening solutions including VERITAS Backup Exec; VERITAS Netbackup DataCenter; Legato Networker and HP's Data Protector provide a comprehensive business solution to our clients. The business imperative is to make client data assessable around the clock which means a solution that is reliable, centrally managed, integrated and automated. C2i has the solution experts to define, design, and deploy your backup recovery solution giving you the enterprise solution tailored to your business requirements. C2i delivers assessment documentation to define the backup recovery strategy, hardware definition and validation of LAN SAN connectivity, implementation of the solution by testing, validating and producing, and complete documentation and knowledge transfer of the backup recovery solution.

## **Documentation and Training Services**

C2i provides our clients with an array of technologists that can assess production networks and operations environments. C2i is proficient in helping our client's baseline and document their networks, peripherals, and running applications that may not be fully archived. This service provides an expert technologist that can focus on the administrative task of collecting network, system, and application data. The information is then compiled into a single source reference while allowing the client's in-house staff to focus on the corporate operational priorities and core competencies.

C2i is proficient in augmenting and customizing client documentation to protect intellectual and operational information. C2i provides clients the peace of mind that multiple layers of technical information is documented and compiled into a comprehensive and easy to use reference.

C2i offers the service of turning network, system, and operational information into training packages. This service allows the client to work with C2i in developing robust documentation for future dissemination of important internal systems. Documentation and training services protect intellectual assets from leaving with single threaded subject matter expertise as well as reduces vulnerability to operational disaster due to insufficiently documented networks and systems. Documentation collected can be formatted into training packages; "train the trainers" sessions can be conducted, as well as training sessions on vendor level or custom classes to reflect the client's specific configurations.

## **Disaster Recovery Services**

### **Overview**

C2i has a large portfolio of business continuity and disaster recovery solutions. These solutions are designed to recover from any emergency in the time period required by each client. Keeping your business operational through disaster involves making data, voice and networks available around the clock. C2i does both the technical and operational design and implementation, including emergency procedures and personnel responsibilities.

C2i has the solution experts to analyze client requirements to design, and deploy your disaster recovery solution, incorporating recovery site setup, rapid site replacement (e.g. Fast track equipment replacement), off site data storage, and backup solutions, giving you the enterprise solution tailored to your business requirements.



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C2i has expertise in high-speed data replication and backup solutions. High-speed data replication expertise includes SAN design and implementation using tools such as HP's Continuous Access (DRM), or Metropolitan or Continental Clusters. Backup recovery solutions include VERITAS Backup Exec; Legato Networker and HP's Data Protector provide comprehensive business solutions to our clients.

## Network Assessment Services

### Overview

The enterprise network is typically fragile, overburdened and under-funded. Worse, it is frequently complex and poorly documented. Managing it requires a thorough understanding of its topology, knowledge of the location of each network component, and individuals with strong technical skills. Virtually everything is dependent on its proper function and on the proper function of all the interconnected and interdependent components. Mission-critical applications must be available regardless of the circumstance, and more mundane applications that add comfort to everyday life become depended on as well.

C2i Network Assessment Services provides our clients with a thorough understanding of their enterprise network. We begin with a careful analysis of the Local Area Network (LAN) and/or Wide Area Network (WAN), including a physical inspection of network components and cabling, as well as a logical examination of the network. As necessary, we test and label components for proper identification. We then construct a detailed logical map of the network. This is provided to you and forms the basis of an analysis of the network, identifying performance bottlenecks and security vulnerabilities.

As the assessment itself is completed, additional services may be provided based on the information generated in the assessment itself. Reconfiguration of the network may be recommended to remove performance bottlenecks.

Network security improvements may also be recommended. These may or may not call for equipment upgrades, though often only simple re-engineering of a network is called for. In the event of a need to design a new architecture of the network, we offer Network Architecture Services, Strategic and Tactical Planning Services as well.

### Qualifying Questions

1. Are there network devices that may have been added to the network by field units or departments without informing the proper network management authority?
2. Do you know where performance bottlenecks and security vulnerabilities might be on your network?
3. Is your firewall the only point of entry from the outside?

### Features

- Physical map of network
- Logical map of network
- Cable and Port Labeling
- IP and MAC Address identification as required
- Analysis of maps to determine performance characteristics
- Analysis of maps to determine security vulnerabilities



## Benefits

- Complete documentation of network
- Improved network management
- Improved ability to recover from network outage or performance degradation
- Enhanced network reliability and availability
- Improved network security

## Services Offered

- Network Assessment and Mapping
- Network Analysis
- Network Architecture and Design
- Network Strategic and Tactical Planning
- Network Performance Tuning
- Convergent Technologies (IPT/VoIP)
- Project Management
- Continuity of Operations Planning and Implementation

## Network Design and Integration Services

### Overview

Deciding what type of networking you need for your organization can be overwhelming. The options are endless. They can include a local area network (LAN) within a department, the combination of many networks within a location, or the interconnection of many different locations and networks throughout the organization, referred to as a WAN. C2i can help your organization with the assessment of these needs and the design of solutions to meet those needs.

C2i will help you understand how your network will respond if you're building, installing or maintaining software applications on your network. Or, if bottlenecks in your systems' operations affect employee productivity, we can help you get to the root of the problem, ensuring you spend your time, energy and money focusing on the right solution.

C2i has an experienced in-house staff of qualified network engineers as well as extensive partnerships with industry leading agencies and organizations that enable us to aid you by utilizing modern networking technologies. We can assist in design of a new data network or expansion of your existing data network. C2i helps you use technology to provide improved network throughput and reliability, and show you how to achieve cost savings by utilizing voice over data and Internet based VPN solutions.

There are numerous options using a wide variety of technologies in various ways to satisfy the networking needs of an organization. The complexity makes network systems very difficult and your organization may encounter conflicting opinions about various technical issues.



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### **Network Design and Integration Offerings**

- Data network architecture and design
- Internet connectivity
- Network health assessments/audits
- Network troubleshooting
- Network protocol

### **Network Design and Integration Products**

- Cisco network and security products
- HP network products
- Compuware application monitoring and analysis tools

### **Capacity and Performance Analysis Services**

#### **Overview**

Upon completion of any network assessment for a client, C2i can provide a snapshot of the health of a client's servers and the data or voice network they support. This snapshot is based on the initial analysis and benchmarking of a client's network. Upon collecting baseline information, C2i will demonstrate the benefits of understanding the client's server and network performance. As the client's network evolves, by adding different departments and converging networks, applications and systems will start to share the corporate wide area network and LAN facilities. As these changes occur, clients should proactively

monitor their network utilization to avoid data delivery and user issues that may become daily operational problems. This can result in time and money related to down time, slow network access, server and application performance, and costly network trouble shooting cycles.

C2i is well qualified to recommend network performance tools, customize tools, and provide data to collection engines. This will help optimize network operations and engineering efforts with our knowledge of life cycle network performance applications.

C2i can provide the client the visibility into their network to determine the capacity of their servers, network links, performance of the network routers and elements, and utilization of their LAN segments. Using off the shelf tools or customized collection tools, C2i can provide the client with the opportunity to save money on circuit bandwidth management and network availability to ensure access to mission critical applications and corporate systems.

#### **Capacity and Performance Analysis Offerings**

- Network Assessment
- Set up LAN/WAN network utilization monitoring
- Set up server and system utilization monitoring
- Growth projections
- Capacity analysis
- Cost benefit analysis

#### **Capacity and Performance Analysis Products**

- Cisco network and monitoring products



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- HP network and server monitoring products
- Compuware application monitoring and analysis tools
- NAI sniffer products

## Project Management

### Overview

Implementation project management is the initiation, continued driving, and persistent follow-up of all activities and tasks throughout the continuum of the project lifecycle-Plan/Orient/Design, Load/Development, Test/Train, Go Live, and Post Implementation.

New system implementations are comprised of numerous high level and detailed activities that require an overall structure and approach in order to successfully meet project timelines and quality objectives. C2i understands these needs and works closely with our clients to ensure a successful project. Typical project management activities include: establishing project organization; developing project scope, strategies, and approach; assessing risks and evaluating readiness for change; determining project policies and procedures; building project plans; initiating communication mediums for status reporting, issue tracking/escalation, and testing; and assisting in day-to-day utilization of resources.

Project implementation services from C2i can help you maximize the potential of your in-house staff on technical project implementations. Our experienced project managers will utilize their structured approach to technical project management, and help you define and manage your project to keep it within the planned scope, budget and timeline.

Our project managers use the Plan, Design, Implement and Manage (PDIM) approach for technical implementation projects. This approach applies a structure and approach to your project goals that will allow you to successfully meet your objectives and timelines. C2i understands this approach and can successfully utilize it to facilitate your project objectives.

### PDIM Approach

- **Planning and Discovery**

The planning and discovery phase includes identifying the project objectives and scope, the project participants and roles, project milestones, and implementation strategy.

- **Design**

The design phase involves defining the hardware, software, network services, and implementation resources required for the project. Creating a project plan and timeline appropriate for your project goals, objectives, and constraints. This phase can be used to develop a comprehensive project plan or a tactical plan specific to an individual phase of implementation.

- **Implement**

In the implementation phase we utilize the developed project plan to rollout the new infrastructure and/or service.

- **Manage**

The project manager will provide scope, timeline, and resource management to ensure a successful project rollout. Change control management will be provided to allow for any necessary changes to



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the project while keeping the project moving. At the completion of rollout, the project manager will provide a project completion report.

Utilizing this proven project management approach, our project managers can provide you with a blueprint for success for implementing network services, network and systems infrastructure, and network-based applications.

### **Benefits**

- Guided approach to project management
- Project scope management
- Project timeline management
- Project budget management

### **Services Offered**

- Implementation project management
- Technical design and review
- Documentation generation and management

## **III. Security Practice**

### **Overview**

Businesses today demand an all-encompassing view of security combined with high quality security technologies that protect them from threats and vulnerabilities. In the case of information technology, the situation has been exacerbated by a combination of not completely understanding the technology and of being unaware of the greater risks to the security, integrity and availability of information and information systems that computerization brings. Information technology is the basis behind everything.

While it is essential to understand technology, security is fundamentally a management issue. Our security professionals have extensive industry experience in enterprise security management, security architecture, and supporting technologies. This experience, combined with a broad range of individual certifications, puts C2i Solutions(C2I ) in a position to design, implement, and properly manage network and system security solutions for the healthcare, government, telecommunication, and commercial marketplaces.

Through our professional consulting services, the C2i Security Practice will:

- Improve the security and privacy awareness of all employees throughout the organization
- Help organizations assess security and privacy risks
- Assist organizations in the development of security plans to manage risks, reduce potential liability, and eliminate business disruption
- Help organizations to establish definitions of policies, procedures, standards
- Help organizations to respond to the security and privacy requirements in various regulatory environments



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## Security Offerings

- Security Assessment
- Internal and External Penetration Testing
- Security/Privacy Policy Assessment and Development
- Security Architecture Planning, Design, Implementation and Management (PDIM)
- Firewall Design, Configuration and Implementation
- Virtual Private Network (VPN) Design, Configuration and Implementation
- Network and Host Based Intrusion Detection Software and Appliances
- AAA (Authentication, Authorization, and Accounting) Servers
- Compliance Services for the Health Information Portability and Accountability Act (HIPAA)
- Solutions under development
- Secure printing
- Secure messaging
- Security and privacy awareness workshops

## Security Products

- Cisco PIX Firewalls and VPN Servers
- Cisco Host and Network Intrusion Detection Products
- Cisco Secure Access Server and LEAP
- Secure Computing Security Products
  
- Sidewinder and Gauntlet Firewalls
- SmartFilter
- SafeWord
- Hardware Tokens
- Open source products

## AAA (Authentication, Authorization, and Accounting) Servers

### Overview

C2i AAA solutions help clients identify which users are accessing critical business systems. C2i AAA solutions support the following features: one-time passwords, role-based authentication, brokered authentication, Extensive Authentication Protocol (EAP) for wireless Ethernet, Web agents for Web Server security and single sign-on for Citrix Metaframe, among others.

### Methodology

C2i supports the following AAA servers:

- Secure Computing SafeWord PremierAccess
- Cisco Secure Access Control Server

### Benefits

- Protect corporate assets
- Protect confidential client/employee data
- Improve customer, investor and employee confidence
- Regulatory compliance



## Firewall Design, Configuration and Implementation

### Overview

C2i Solutions (C2i) Firewall services provide advanced design, installation, and configuration of the leading firewalls available today. C2i ' highly trained security consultants become an extension of your in-house IT staff, providing analysis, configuration, and set-up of the most appropriate firewall for your environment. The C2i firewall service embraces industry best practices to ensure a high level of network access, information availability, integrity and privacy.

### Methodology

C2i firewall solutions include the following supported products:

- Cisco PIX
- Secure Computing-Sidewinder and Gauntlet

### Benefits

- Protect corporate assets, and confidential client/employee data
- Improve customer, investor and employee confidence
- Regulatory compliance

## Compliance Services for the Health Insurance Portability and Accountability Act (HIPAA)

### Overview

Government health agencies and other health care payers and providers are faced with the challenge of meeting government-mandated guidelines within two years. The Health Insurance Portability and Accountability Act (HIPAA) requires health care organizations to adopt industry-wide standards to improve communication across multiple platforms, increase consistency of shared information, ensure the security of shared data, and protect the privacy of individually identifiable health information.

Becoming HIPAA compliant creates tremendous opportunities for organizations that want to move forward with their digital strategy and can be a catalyst for organizations to take advantage of the digital economy. C2i Solutions HIPAA compliance offering include:

- Consulting services for HIPAA privacy and security standards
- HIPAA compliance management tool
- Remediation services

### Benefits

- Protect corporate assets
- Protect confidential client/employee data
- Improve customer, investor and employee confidence
- Regulatory compliance



C2i Solutions, Inc.

## Network and Host Based Intrusion Detection Software and Appliances

### Overview

C2i provides its clients with the latest in products and services with installation and support from our highly trained security experts. We are a Cisco Specialized Security Partner as well as Certified, Secure Computing Sidewinder (Gauntlet) Certified.

### Methodology

C2i supports the following IDS products:

- Cisco Host and Network Intrusion Detection Products
- Enterasys Host and Network Intrusion Detection Products
- Compuware Application Monitoring and Analysis Tools
- Open Source (SNORT, Port Sentry, etc.)

### Benefits

- Protect corporate assets
- Protect confidential client/employee data
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- Regulatory compliance

## Security Architecture Planning, Design, Implementation and Management (PDIM)

### Overview

Using the Planning, Design, Implementation and Management (PDIM) methodology, C2i can take you through the entire security lifecycle. C2i in-house and staff augmented engineers are certified, experienced, and up-to-date on most of today's leading security issues and technologies. C2i security engineers are prepared to address all aspects of your IT infrastructure, including perimeter security, remote access, two-factor authentication, and server/storage/desktop security.

### Methodology

During the **Planning** phase, C2i works with you to set and prioritize security goals. The **Design** considers the infrastructure that is in place today and then enhances it to meet the goals previously set. C2i engineers and consultants **Implement** and test the components that make up your new security infrastructure and can provide on-going enhancements and **Management** of your new environment.

### Benefits

- Protect corporate assets
- Protect confidential client/employee data
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- Regulatory compliance



C2i Solutions, Inc.

## Security/Privacy Policy Development and Assessment

### Overview

C2i Security/Privacy Policy Assessment and Development service shows organizations how to establish definitions of policy, procedure, standard, guidelines and regulation. We assist our clients in the identification of the key components of an effective policy statement consist of, and identify potential pitfalls. Using industry-accepted standards, C2i will identify what key items should be included in information security and privacy policy statements.

During the assessment phase, C2i will address the enterprise's definition of information security and privacy, management's intentions, explanation of requirements and laws, definition of general and specific goals, and the process for reporting security related incidents. Advice on how to promote and enforce your organizations security and privacy policies will also be offered.

### Methodology

A C2i Security Analysis includes evaluation of your security policies against the SANS Institute's Information Security Knowledge Base including:

- **Acceptable Encryption Policy/Acceptable Use Policy** - Defines acceptable use of equipment and computing services and the appropriate employee security measures to protect the organization's corporate resources and proprietary information.
- Analog/ISDN Line Policy
- Anti-Virus Process Policy
- Application Service Provider Policy
- Application Service Provider Policy
- Acquisition Assessment Policy
- Audit Policy - Defines the requirements and provides the authority for the information security team to conduct audits and risk assessments to ensure integrity of information/resources, to investigate incidents, to ensure conformance to security policies, or to monitor user/system activity where appropriate.
- Automatically Forwarded Email Policy - Documents the requirement that no email will be automatically forwarded to an external destination without prior approval from the appropriate manager or director.
- Database Credentials Coding Policy - Defines requirements for securely storing and retrieving database usernames and passwords.
- Dial-in Access Policy
- DMZ Lab Security Policy
- Extranet Policy - Defines the requirement that third party organizations requiring access to the organization's networks must sign a third-party connection agreement.
- Information Sensitivity Policy
- Internal Lab Security Policy
- Internet DMZ Equipment Policy
- Lab Anti-Virus Policy
- Password Protection Policy
- Remote Access Policy
- Risk Assessment Policy
- Router Security Policy
- Server Security Policy
- The Third Party Network Connection Agreement



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- VPN Security Policy - Defines the requirements for Remote Access IPsec or L2TP Virtual Private Network (VPN) connections to the organization's network.
- Wireless Communication Policy

### **Benefits**

- Create corporate culture that includes security/privacy awareness
- Protect corporate assets
- Protect confidential client/employee data
- Improve customer, investor and employee confidence
- Regulatory compliance

### **Security Assessment**

#### **Overview**

The objective of the C2i Network Security Assessment is to analyze your IT infrastructure and identify the risk to which your system is exposed. This knowledge will help your organization measure and manage the risk of attack on the confidentiality, availability, and integrity of your network and information systems.

Combined with our Internal and External Penetration Testing Service, security data is collected and analyzed. From this information, a detailed report is developed that includes operational-level recommendations for making your enterprise IT infrastructure more secure. This course will result in reduced risk, reduced business disruption, and will help fully leverage your IT systems.

The C2i Security Assessment will survey your organization's Management Controls, Operational Controls, and Technical Controls. Through interviews and client judgment, the level of effectiveness of each control will be determined. Working with the client, the relative (high, medium, low) consequences of a security breach will be categorized by sensitivity level so a risk assessment can be made.

#### **Methodology**

C2i Security Assessment methodology is based on recommendations found in the *National Institute of Standards and Technology (NIST) Special Publication 800-26*.

Protection categories include:

- Confidentiality
- Integrity
- Authenticity
- Non-repudiation
- Accountability
- Availability

Additional security test, such as war dialing, war walking, ethical hacking, social engineering, etc. can be added to the basic security assessment described above.

The Security Assessment report will include specific recommendations for improving the security of your IT infrastructure. The National Institute of Standards and Technology (NIST) Security Self-Assessment Guide for Information Technology Systems, November 2001, (NIST Special Publication 800-26) will be the main checklist for evaluating the IT infrastructure. The following controls will be evaluated:



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- Management Controls
- Operational Controls
- Technical Controls

C2i also uses the Security Information for National Electronic Disease Surveillance System (NEDSS) Base System used to supplement the NIST checklists.

#### **Benefits**

- Protect corporate assets
- Protect confidential client/employee data
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- Regulatory compliance

### **Virtual Private Network (VPN) Design, Configuration and Implementation**

#### **Overview**

C2i Solutions (C2i) VPN service is designed to leverage the power of the Internet and allow secure, highly available remote access. C2i engineers can design, configure and implement a VPN using one of several leading edge technologies.

#### **Methodology**

C2i VPN solutions include the following supported products:

- Cisco SAFE VPN (PIX, Concentrator, Router)
- Secure Computing Sidewinder

#### **Benefits**

- Secure anywhere/anytime access
- Improved employee productivity and morale
- Protect corporate access

#### **Locations:**

C2i maintains personnel and offices in several locations in order to provide on-site, personalized service delivery:

- Georgia
- Alabama
- Washington, DC
- North Carolina
- New York
- Texas

#### **Contact C2i**

To discuss your project or for any other questions, call us at:

770-438-1112

Email us at:

ewilliams@C2isolutions.com.